

Ser Thr Val Trp Asp Val Ala Thr Arg Val Val Ser Glu Tyr Gly Arg
 290 295 300
 Gly Glu Leu Arg Asp Leu Ser Thr Pro Asp Ala Leu His Glu Ala Arg
 305 310 315 320
 Leu Leu Met Leu Asp Ile Ser Lys Ala Arg Phe Cys Leu Gly Trp Glu
 325 330 335
 Pro Arg Met Asn Ile Gly Gln Thr Val Gly Leu Thr Val Asp Trp Tyr
 340 345 350
 Lys Arg Tyr Arg Glu Glu Glu Val Tyr Asp Val Cys Val Asp Gln Ile
 355 360 365
 Lys Asp Tyr Leu Leu Lys
 370

<210> 5770
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 5770
 Leu Met Met Ser Val Ile Trp Leu Phe Asn Ser Pro Glu Glu Ser Asp
 1 5 10 15
 Cys Ser Leu Gly Val Ile Ile Gly Ile Leu Leu Ser Gln Ala Leu Ser
 20 25 30
 Ser Leu Pro Gln Asp Ile Lys Thr Lys Lys Asn Arg Leu Arg Lys Ser
 35 40 45
 Gly Thr Lys Tyr Phe Ile Met Phe Arg Leu Gly Tyr Lys
 50 55 60

<210> 5771
 <211> 477
 <212> PRT
 <213> B.fragilis

<400> 5771
 Thr Lys Arg Ser Tyr Leu Leu Asn Gln Arg Thr Phe Gly Phe Lys Pro
 1 5 10 15
 Lys Lys Ser Ser Phe Ala Thr Gln Lys Leu Met Pro Met Leu Leu Ile
 20 25 30
 Ile Asp Asp Asp Ser Gly Val Arg Ser Ser Leu Ser Phe Met Leu Lys
 35 40 45
 Arg Ala Gly Tyr Gln Val Ile Ala Val Thr Gly Pro Arg Glu Ala Met
 50 55 60
 Glu Val Val Arg Ser Glu Ala Pro Ser Leu Ile Leu Met Asp Met Asn
 65 70 75 80
 Phe Thr Leu Ser Thr Ser Gly Glu Glu Gly Leu Thr Leu Leu Lys Gln
 85 90 95
 Val Lys Val Phe Arg Pro Asp Val Pro Val Ile Leu Met Thr Ala Trp
 100 105 110
 Gly Ser Ile Gln Leu Ala Val Gln Gly Met Gln Ala Gly Ala Phe Asp
 115 120 125
 Phe Ile Thr Lys Pro Trp Asn Asn Ala Ala Leu Leu Gln Arg Ile Glu
 130 135 140
 Thr Ala Leu Glu Leu Thr Ala Thr Pro Lys Asp Thr Pro Gln Glu Gln
 145 150 155 160
 Ser Gly Thr Leu Asn Arg Ser His Ile Ile Gly Lys Ser Arg Gly Leu
 165 170 175
 Met Glu Val Leu Asn Thr Val Ala Arg Ile Ala Pro Thr Asn Ala Pro
 180 185 190
 Val Leu Ile Thr Gly Glu Ser Gly Thr Gly Lys Glu Leu Ile Ala Glu

195	200	205
Ala Ile His Ile Asn Ser Gln Arg Val Arg Gln Pro Phe Val Lys Val		
210	215	220
Asn Leu Gly Gly Ile Ser Gln Ser Leu Phe Glu Ser Glu Met Phe Gly		
225	230	235
His Lys Lys Gly Ala Phe Thr Asp Ala Thr Ala Asp Arg Met Gly Arg		
	245	250
Phe Glu Met Ala Asn Lys Gly Thr Ile Phe Leu Asp Glu Ile Gly Asp		
	260	265
Leu Asp Pro Ser Cys Gln Val Lys Leu Leu Arg Val Leu Gln Asp Gln		
	275	280
Thr Phe Glu Val Leu Gly Asp Ser Arg Pro Arg Lys Thr Asp Ile Arg		
	290	295
Val Val Ser Ala Thr Asn Ala Asp Leu Ser Lys Met Val Ser Glu His		
305	310	315
Thr Phe Arg Glu Asp Leu Phe Tyr Arg Ile Asn Leu Ile Thr Val Lys		
	325	330
Leu Pro Ala Leu Arg Glu Arg Arg Glu Asp Ile Pro Leu Leu Ala Arg		
	340	345
His Phe Ala Asp Arg Gln Ala Glu Ile Asn Asn Leu Pro Arg Thr Glu		
	355	360
Phe Ser Ser Asp Ala Leu Asn Phe Leu Ser Arg Leu Pro Phe Pro Gly		
	370	375
Asn Ile Arg Glu Leu Lys Asn Leu Val Glu Arg Thr Ile Leu Val Ser		
385	390	395
Gly Lys Glu Val Leu Asp Ala Ile Asp Phe Glu Asn Gln Tyr Gln Arg		
	405	410
His Asp Glu Ser Val Ala Thr Ser Ser Ser Phe Ala Gly Met Thr Leu		
	420	425
Asp Glu Ile Glu Lys Gln Thr Ile Leu Gln Ala Leu Glu Arg Tyr Lys		
	435	440
Gly Asn Leu Ser Gln Val Ala Thr Ala Leu Gly Ile Ser Arg Ala Ala		
	450	455
Leu Tyr Arg Arg Leu Glu Lys Tyr Asp Ile Gly Asp Lys		
465	470	475

<210> 5772
 <211> 107
 <212> PRT
 <213> B.fragilis

<400> 5772
Cys Ala Asp Pro Ser Gln Pro Leu Val Lys Thr Tyr Pro Thr Phe Asp
1 5 10 15
Thr Met Leu Gln Gln Leu Lys Asp Asn Lys Thr Lys Gln Val Thr Leu
20 25 30
Val Pro Phe Met Phe Val Ala Gly Asp His Ala Asn Asn Asp Ile Ala
35 40 45
Val Asp Trp Lys Glu Ala Leu Glu Lys Glu Gly Leu Lys Val Asp Val
50 55 60
Arg Met Gln Gly Leu Gly Glu Ile Pro Ala Ile Gln Gln Leu Phe Ile
65 70 75 80
Asp His Ala Gln Phe Met Leu Lys His Glu Met Val Asp Ile Met Lys
85 90 95
Lys Lys Ala Lys Tyr Ala Lys Asp Lys Asp Glu
100 105

<210> 5773
 <211> 500

<212> PRT

<213> B.fragilis

<400> 5773

Leu	His	Ala	Phe	Arg	Ile	Leu	Tyr	Phe	Ile	Met	Met	Ile	Thr	Lys	Phe	1	5	10	15
Met	Tyr	Thr	Ile	His	Arg	Val	Leu	Gly	Thr	Leu	Leu	Ser	Ile	Leu	Phe	20	25	30	
Leu	Val	Trp	Phe	Leu	Ser	Ala	Phe	Val	Met	Met	Tyr	His	Gly	Phe	Pro	35	40	45	
Arg	Ala	Ser	Gln	Ala	Glu	Lys	Leu	Glu	Lys	Leu	Glu	Pro	Leu	Ser	Pro	50	55	60	
Ser	Leu	Pro	Ser	Val	Ser	Glu	Ile	Thr	Ser	Arg	Leu	Pro	Glu	Gly	Glu	65	70	75	80
Lys	Val	Lys	Gly	Ile	Arg	Leu	Asp	Arg	Tyr	Leu	Gly	Gln	Thr	Ile	Phe	85	90	95	
His	Ile	Arg	Thr	Asp	Lys	Gly	Glu	His	Asn	Leu	Pro	Ala	Asp	Ser	Val	100	105	110	
Gln	Ala	Leu	Pro	Val	Ile	Asp	Gly	Ser	Arg	Ile	His	Arg	Val	Ala	Ser	115	120	125	
Leu	Trp	Cys	Asn	Ala	Pro	Ile	Asp	Arg	Ile	Asp	Thr	Leu	Asn	Arg	Leu	130	135	140	
Asp	Gln	Trp	Ile	Pro	Phe	Gly	Gly	Leu	Lys	Arg	Glu	Phe	Pro	Ile	Tyr	145	150	155	160
Lys	Phe	His	Phe	Ala	Asp	Thr	Glu	Lys	His	Gln	Leu	Tyr	Ile	Gly	Ser	165	170	175	
Gln	Ser	Gly	Glu	Val	Leu	Gln	Phe	Thr	Thr	Arg	Asn	Glu	Arg	Phe	Trp	180	185	190	
Ala	Trp	Leu	Gly	Ala	Ile	Pro	His	Trp	Val	Tyr	Phe	Thr	Trp	Leu	Arg	195	200	205	
Gln	Asp	Ala	Ala	Leu	Trp	Ser	Ile	Thr	Val	Ile	Trp	Leu	Ser	Gly	Ile	210	215	220	
Gly	Cys	Leu	Met	Thr	Ile	Ala	Gly	Leu	Trp	Val	Gly	Met	Asp	Val	Trp	225	230	235	240
Arg	Arg	Ser	Arg	Lys	Gln	Lys	Gly	Lys	Phe	Ser	Pro	Tyr	Arg	Lys	Lys	245	250	255	
Trp	Tyr	His	Trp	His	Tyr	Val	Thr	Gly	Ile	Val	Phe	Gly	Leu	Phe	Val	260	265	270	
Leu	Thr	Phe	Cys	Phe	Ser	Gly	Met	Met	Ser	Leu	Ala	Glu	Val	Pro	Ala	275	280	285	
Trp	Ile	Ser	Lys	Pro	Val	Leu	Asp	Arg	Asn	Pro	Thr	Arg	Glu	Ile	Lys	290	295	300	
Lys	Gly	Ala	Pro	Lys	Pro	Val	Gln	Tyr	Leu	Leu	Asp	Tyr	Arg	Gln	Ile	305	310	315	320
Leu	Thr	Glu	Tyr	Pro	Asp	Val	Arg	Gln	Val	Glu	Trp	Ser	Asn	Phe	Arg	325	330	335	
Ser	Lys	Pro	Tyr	Tyr	Ile	Val	Lys	Arg	Ser	Glu	Gly	Asp	Leu	Tyr	Ile	340	345	350	
Asp	Ala	Ser	Asp	Ser	Leu	Pro	His	Pro	Leu	Asn	Leu	Asp	Lys	Lys	Gln	355	360	365	
Val	Thr	Asp	Ala	Val	Arg	Thr	Ile	His	Gly	Asp	Ser	Ile	His	Leu	Lys	370	375	380	
Val	Glu	Leu	Ile	Asp	Lys	Phe	Glu	Thr	Tyr	Tyr	Arg	Asp	Met	Ser	Arg	385	390	395	400
Met	Tyr	Arg	Asp	Arg	Ser	Leu	Leu	Pro	Val	Trp	Lys	Ile	Thr	Val	Asp	405	410	415	
Asp	Pro	Asp	His	Ser	Cys	Tyr	Tyr	Ile	His	Pro	Glu	Thr	Ala	Thr	Val	420	425	430	
Arg	Tyr	Val	Asn	Ser	Thr	Ala	Arg	Trp	Lys	Tyr	Trp	Met	Tyr	Thr	Ala				

435 440 445
 Leu His Arg Leu Arg Ile Gln Gly Leu Asn Ser Ser Pro Thr Leu Arg
 450 455 460
 Lys Ser Val Leu Trp Val Leu Leu Leu Gly Gly Thr Val Cys Ser Leu
 465 470 475 480
 Ser Gly Val Val Leu Gly Val Arg Tyr Ile Glu Arg Lys Cys Arg Lys
 485 490 495
 Lys Thr Arg Arg
 500

<210> 5774
 <211> 172
 <212> PRT
 <213> B.fragilis

<400> 5774
 Leu Asn Thr Thr Gln Thr Met Asn Lys Lys Leu Leu Lys Gln Ile Val
 1 5 10 15
 Asn Glu Arg Arg Ser Asn Ser Trp Leu Phe Ile Glu Leu Leu Leu Val
 20 25 30
 Ser Ile Val Leu Trp Tyr Val Val Asp Tyr Met Phe Val Thr Leu Tyr
 35 40 45
 Thr Tyr Phe Glu Pro Arg Gly Phe Asp Ile Glu Asn Thr Tyr Arg Val
 50 55 60
 Glu Phe Asp Tyr Leu Ile Glu Lys Ser Pro Asp Tyr Ile Ala Asn Arg
 65 70 75 80
 Thr Asp Glu Glu Ala His Ala Asp Met Arg Glu Leu Leu Asp Arg Leu
 85 90 95
 Arg Arg Arg Pro Gly Val Glu Ala Val Ser Met Ser Gln Asn Ser Phe
 100 105 110
 Pro Tyr Asn Gly Ser Asn Ser Gly Met Asp Val Arg Leu Asp Thr Met
 115 120 125
 Glu Ser Lys Tyr Asn Ile Arg Arg Trp Val Thr Pro Asp Phe Phe Arg
 130 135 140
 Val Phe Arg Tyr Gln Gly Ala Asn Arg Arg Asn Ser Gly Thr Ile Ser
 145 150 155 160
 Cys Ser Val Glu Gly Gly Tyr Phe Tyr Gly Ile Ala
 165 170

<210> 5775
 <211> 347
 <212> PRT
 <213> B.fragilis

<400> 5775
 Lys Val Tyr Thr Leu Leu Cys Lys Arg Arg Leu Leu Ile Phe Gly Val
 1 5 10 15
 Asn Leu Asn Lys Met Lys Val Tyr Ile Lys Asn Ile Ser Arg Lys Lys
 20 25 30
 Gly Glu Phe Gln Phe Tyr Met His Gln Phe Val Glu Ala Cys Ile Arg
 35 40 45
 Gln Asn Ile Pro Phe Val Asn Glu Leu His Val Cys Val Arg Leu Lys
 50 55 60
 Leu Ser Ala Val Met Ile Lys Leu Gly His Trp Ile Asn Phe Phe Phe
 65 70 75 80
 Cys Arg Cys Asn Asn Lys Ala Ile Ile Val Ser Thr Trp Gly Gly Gly
 85 90 95
 Leu Met Tyr Thr Ser Phe Pro Tyr Ser Leu Leu Tyr Glu Ile Ile Pro
 100 105 110

Val Phe Trp Asp Ser Trp Pro Phe Asn Trp Glu Glu Gln Ile Tyr Ser
 115 120 125
 Leu Arg Arg Leu Asn Cys Arg Thr Cys Phe Val Thr Ser Ser Gln Val
 130 135 140
 Ala Gln Arg Ile Lys Glu Thr Leu Pro Asn Ile Asn Val His Trp Leu
 145 150 155 160
 Pro Glu Gly Ile Asp Ile Leu Asp Tyr Val Pro Gly Gln Asp Leu Thr
 165 170 175
 Glu Arg Ser Ile Glu Ile Tyr Glu Leu Gly Arg Gln Lys Ala Asp Tyr
 180 185 190
 His Lys Ile Leu Cys Asp Leu Lys Ser Glu Gly Ile Phe Ser Ser Phe
 195 200 205
 Leu Cys Asn Glu Tyr Asp Ile Asn Gly Met Thr Thr Lys Leu Ala Phe
 210 215 220
 Pro Thr Ala Lys Ala Leu Leu Lys Ala Leu Pro Asn Ile Lys Ile Val
 225 230 235 240
 Ile Ser Phe Pro Gln Val Asp Thr His Pro Glu Lys Val Gly Asn Ile
 245 250 255
 Glu Thr Leu Thr Gln Arg Tyr Trp Glu Ala Met Leu Ser Arg Asn Leu
 260 265 270
 Ile Val Gly Arg Ala Pro Asn Glu Leu Ile Gln Leu Ile Gly Tyr Asn
 275 280 285
 Pro Val Ile Asp Val Asp Trp Glu Asp Pro Lys Lys Gln Leu Ser Asp
 290 295 300
 Ile Leu Leu Asn Ile Ser Ser Phe Gln Lys Leu Val Asp Arg Asn Tyr
 305 310 315 320
 Arg Thr Ala Arg Lys Ile Ser Ser Trp Asp Asn Arg Val Lys Asp Ile
 325 330 335
 Ile Thr Ile Leu Arg Thr Ser Gly Tyr Glu Ile
 340 345

<210> 5776

<211> 386

<212> PRT

<213> B.fragilis

<400> 5776

Arg Arg Leu Thr Arg Arg Ile Lys Arg Lys Asn Lys Met Phe Ser Asp
 1 5 10 15
 Glu Leu Glu Lys Ile Ser Trp Glu Glu Thr Thr Lys Ala Ile Tyr Ser
 20 25 30
 Lys Thr Asp Ala Asp Val Arg Arg Ala Leu Ser Lys Glu His Cys Asp
 35 40 45
 Val Asn Asp Phe Met Ala Leu Ile Ser Pro Ala Ala Ala Pro Tyr Leu
 50 55 60
 Glu Thr Met Ala Arg Leu Ser Arg Lys Tyr Thr Met Glu Arg Phe Gly
 65 70 75 80
 Lys Thr Ile Ser Met Phe Val Pro Leu Tyr Ile Thr Asn Ser Cys Thr
 85 90 95
 Asn Ser Cys Val Tyr Cys Gly Phe Asn His Asn Asn Pro Met Lys Arg
 100 105 110
 Thr Ile Leu Thr Glu Glu Glu Met Val Asn Glu Tyr Lys Ala Ile Lys
 115 120 125
 Lys Leu Ala Pro Phe Glu Asn Leu Leu Leu Val Thr Gly Glu Asn Pro
 130 135 140
 Ala Lys Ala Gly Val Asp Tyr Ile Glu Arg Ala Leu Leu Leu Ala Lys
 145 150 155 160
 Pro Tyr Phe Ala Asn Leu Gln Ile Glu Val Met Pro Leu Lys Ala Glu
 165 170 175

Glu Tyr Glu Arg Leu Thr His Ala Gly Leu Asn Gly Val Ile Cys Phe
 180 185 190
 Gln Glu Thr Tyr Asn Lys Ala Asn Tyr Asn Ile Tyr His Pro Arg Gly
 195 200 205
 Met Lys Ser Lys Phe Glu Trp Arg Val Asn Gly Phe Asp Arg Met Gly
 210 215 220
 Gln Ala Gly Val His Lys Ile Gly Met Gly Val Leu Ile Gly Leu Glu
 225 230 235 240
 Glu Trp Arg Thr Asp Ile Thr Met Met Ala Tyr His Leu Arg Tyr Leu
 245 250 255
 Gln Lys His Tyr Trp Lys Thr Lys Tyr Ser Val Asn Phe Pro Arg Met
 260 265 270
 Arg Pro Ser Glu Asn Gly Gly Phe Gln Pro Asn Val Val Met Asn Asp
 275 280 285
 Arg Glu Leu Ala Gln Val Thr Phe Ala Met Arg Ile Phe Asp His Asp
 290 295 300
 Val Asp Ile Ser Tyr Ser Thr Arg Glu Ser Ala Ala Phe Arg Asn His
 305 310 315 320
 Met Ala Thr Leu Gly Val Thr Thr Met Ser Ala Glu Ser Lys Thr Glu
 325 330 335
 Pro Gly Gly Tyr Phe Thr Tyr Pro Gln Ala Leu Glu Gln Phe His Val
 340 345 350
 Ser Asp Glu Arg Lys Ala Val Glu Val Asp Ala Ala Leu Arg Ser Leu
 355 360 365
 Gly Arg Ile Pro Val Tyr Lys Asp Trp Asp Thr Ala Leu Thr Leu Pro
 370 375 380
 Gln Cys
 385

<210> 5777

<211> 555

<212> PRT

<213> B.fragilis

<400> 5777

Leu Asn Ile Thr Leu Asp Ile Met Met Lys Ser Asn Glu Asn Asn Gly
 1 5 10 15
 Ala Val Thr Lys Ser Phe Ala Lys Lys Met Glu Ser Ile Ser Pro Phe
 20 25 30
 Glu Leu Lys Asn Lys Leu Ile Glu Met Ala Asp Glu Ser Ile Lys Lys
 35 40 45
 Ile Ala His Thr Met Leu Asn Ala Gly Arg Gly Asn Pro Asn Trp Ile
 50 55 60
 Ala Thr Thr Pro Arg Glu Ala Phe Phe Leu Leu Gly Lys Phe Gly Leu
 65 70 75 80
 Glu Glu Cys Arg Arg Val Met Tyr Leu Pro Glu Gly Ile Ala Gly Ile
 85 90 95
 Pro Gln Lys Asp Gly Ile Ala Ala Arg Phe Glu Thr Phe Leu Lys Thr
 100 105 110
 Asn His Ser Gln Pro Gly Ala Glu Leu Leu Lys Gly Thr Tyr Gln Tyr
 115 120 125
 Met Leu Leu Glu His Ala Ala Asp Pro Asp Thr Leu Val His Glu Trp
 130 135 140
 Ala Glu Gly Val Val Gly Asp Gln Tyr Pro Val Pro Asp Arg Ile Leu
 145 150 155 160
 Gln Phe Thr Glu Met Ile Val Gln Asp Tyr Leu Ala Gln Glu Met Cys
 165 170 175
 Asp Arg Arg Pro Pro Lys Gly Lys Tyr Asp Leu Phe Ala Thr Glu Gly
 180 185 190

Gly Thr Ala Ala Met Cys Tyr Val Phe Asp Ser Leu Gln Glu Asn Phe
 195 200 205
 Leu Leu Asn Lys Gly Asp Gly Ile Ala Leu Met Val Pro Val Phe Thr
 210 215 220
 Pro Tyr Ile Glu Ile Pro Gln Leu Arg Arg Tyr Glu Phe Asn Val Thr
 225 230 235 240
 Glu Ile Ser Ala Asp Gln Met Thr Thr Asp Gly Leu His Thr Trp Gln
 245 250 255
 Tyr Lys Asp Glu Asp Ile Asp Arg Leu Arg Asn Pro Gln Ile Lys Ala
 260 265 270
 Leu Phe Ile Thr Asn Pro Ser Asn Pro Pro Ser Tyr Thr Leu Asn Pro
 275 280 285
 Glu Thr Ala Ala Arg Ile Val Asp Ile Val Lys Lys Asp Asn Pro Asn
 290 295 300
 Leu Met Ile Ile Thr Asp Asp Val Tyr Gly Thr Phe Ser Pro His Phe
 305 310 315 320
 Arg Ser Leu Met Ala Glu Leu Pro Gln Asn Thr Leu Cys Val Tyr Ser
 325 330 335
 Phe Ser Lys Tyr Phe Gly Ala Thr Gly Trp Arg Asp Ala Val Ile Ala
 340 345 350
 Leu His Glu Glu Asn Ile Phe Asp Arg Met Ile Ala His Leu Pro Glu
 355 360 365
 Glu Gln Lys Thr Ile Leu Asn Lys Arg Tyr Ser Ser Leu Thr Leu Thr
 370 375 380
 Pro Glu Lys Leu Lys Phe Ile Asp Arg Met Val Ala Asp Ser Arg Gln
 385 390 395 400
 Val Ala Leu Asn His Thr Ala Gly Leu Ser Leu Pro Gln Gln Thr Gln
 405 410 415
 Met Ser Leu Phe Ala Ser Phe Ala Ile Leu Asp Lys Glu Asn Arg Tyr
 420 425 430
 Lys Asn Lys Met Gln Glu Ile Ile Arg Arg Arg Leu Lys Ala Leu Trp
 435 440 445
 Asp Asn Thr Gly Phe Ser Leu Val Asp Asp Pro Leu Arg Val Gly Tyr
 450 455 460
 Tyr Ser Glu Ile Asp Met Leu Val Trp Ala Lys Ile Phe Tyr Gly Glu
 465 470 475 480
 Glu Phe Val Ser Tyr Leu Lys Lys Thr Tyr Ser Pro Leu Asp Val Val
 485 490 495
 Phe Arg Leu Ala Asn Glu Thr Ser Leu Val Leu Leu Asn Gly Gly Gly
 500 505 510
 Phe Ala Gly Pro Glu Trp Ser Val Arg Val Ser Leu Ala Asn Leu Asn
 515 520 525
 Glu Lys Asp Tyr Val Lys Ile Gly Gln Gly Ile Lys Arg Ile Leu Asp
 530 535 540
 Glu Tyr Ala Val Lys Trp Gln Glu Ser Arg Lys
 545 550 555

<210> 5778

<211> 595

<212> PRT

<213> B.fragilis

<400> 5778

Thr Asn Lys Thr Ile Thr Ser Pro Pro Ala Pro Leu Pro Ser Ile Thr
 1 5 10 15
 Leu Arg Glu Lys Asn Thr Gly Leu Arg Asp Pro Asn Asn Glu Cys Met
 20 25 30
 Glu Gln Arg Ile Lys Phe Pro Arg Ser Glu Lys Val Tyr Leu Ser Gly
 35 40 45

Lys Leu Phe Pro Glu Ile Arg Val Gly Met Arg Lys Val Glu Gln Val
 50 55 60
 Pro Ser Thr Thr Phe Glu Gly Glu Lys Lys Val Ile Thr Pro Asn Pro
 65 70 75 80
 His Val Tyr Ile Tyr Asp Thr Ser Gly Pro Phe Ser Asp Pro Asp Ile
 85 90 95
 Glu Ile Asp Leu Lys Lys Gly Leu Pro Arg Leu Arg Glu Glu Trp Ile
 100 105 110
 Leu Asn Arg Gly Asp Val Glu Gln Leu Pro Glu Ile Ser Ser Glu Tyr
 115 120 125
 Gly Arg Met Arg Arg Asp Asp Gly Ser Leu Asp His Leu Arg Phe Glu
 130 135 140
 His Ile Ala Leu Pro Tyr Arg Ala Lys Ala Gly Arg His Ile Thr Gln
 145 150 155 160
 Met Ala Tyr Ala Lys Gln Gly Ile Val Thr Pro Glu Met Glu Tyr Val
 165 170 175
 Ala Ile Arg Glu Asn Met Asn Cys Glu Glu Leu Gly Ile Glu Thr His
 180 185 190
 Ile Thr Pro Glu Phe Val Arg Gln Glu Ile Ala Glu Gly Arg Ala Val
 195 200 205
 Leu Pro Ala Asn Ile Asn His Pro Glu Ala Glu Pro Met Ile Ile Gly
 210 215 220
 Arg Asn Phe Leu Val Lys Ile Asn Thr Asn Ile Gly Asn Ser Ala Thr
 225 230 235 240
 Thr Ser Ser Ile Asp Glu Glu Val Glu Lys Ala Met Trp Ser Cys Lys
 245 250 255
 Trp Gly Gly Asp Thr Leu Met Asp Leu Ser Thr Gly Glu Asn Ile His
 260 265 270
 Glu Thr Arg Glu Trp Ile Ile Arg Asn Cys Pro Val Pro Val Gly Thr
 275 280 285
 Val Pro Ile Tyr Gln Ala Leu Glu Lys Val Asn Gly Lys Val Glu Asp
 290 295 300
 Leu Thr Trp Glu Leu Tyr Arg Asp Thr Leu Ile Glu Gln Cys Glu Gln
 305 310 315 320
 Gly Val Asp Tyr Phe Thr Ile His Ala Gly Ile Arg Arg His Asn Val
 325 330 335
 His Leu Ala Glu Lys Arg Leu Cys Gly Ile Val Ser Arg Gly Gly Ser
 340 345 350
 Ile Met Ser Lys Trp Cys Leu Val His Asp Arg Glu Ser Phe Leu Tyr
 355 360 365
 Glu His Phe Asp Asp Ile Cys Asp Ile Leu Ala Gln Tyr Asp Val Ala
 370 375 380
 Val Ser Leu Gly Asp Gly Leu Arg Pro Gly Ser Thr His Asp Ala Asn
 385 390 395 400
 Asp Glu Ala Gln Phe Ala Glu Leu Asp Thr Met Gly Glu Leu Val Val
 405 410 415
 Arg Ala Trp Glu Lys Asn Val Gln Ala Phe Ile Glu Gly Pro Gly His
 420 425 430
 Val Pro Met His Lys Ile Arg Glu Asn Met Glu Arg Gln Ile Glu Lys
 435 440 445
 Cys His Asn Ala Pro Phe Tyr Thr Leu Gly Pro Leu Val Thr Asp Ile
 450 455 460
 Ala Pro Gly Tyr Asp His Ile Thr Ser Ala Ile Gly Ala Ala Gln Ile
 465 470 475 480
 Gly Trp Leu Gly Thr Ala Met Leu Cys Tyr Val Thr Pro Lys Glu His
 485 490 495
 Leu Ala Leu Pro Asp Lys Glu Asp Val Arg Val Gly Val Ile Thr Tyr
 500 505 510
 Lys Ile Ala Ala His Ala Ala Asp Leu Ala Lys Gly His Pro Gly Ala

515	Gln Val Arg Asp Asn Ala	520	Leu Ser Lys Ala Arg Tyr	525	Glu Phe Arg Trp
530	Lys Asp Gln Phe Asp Leu	535	Ser Leu Asp Pro Glu Arg	540	Ala Phe Ser Tyr
545	Phe His Ala Gly Arg His	550	Thr Asp Gly Glu Tyr Cys	555	Thr Met Cys Gly
	565		570		575
Pro Asn Phe Cys Ala Met	Arg Leu Ser Arg Asp	Leu Lys Lys			
580		585		590	
Lys Gln Lys					
595					

<210> 5779
 <211> 257
 <212> PRT
 <213> B.fragilis

<400> 5779

Pro Ile Lys Thr Lys Lys His Thr Ala Met Glu Ile Thr Leu Lys Asn	
1 5 10 15	
Gln Phe Ile Thr Leu Trp Asn Thr Tyr Phe Pro Gln Ala Gly Leu Pro	
20 25 30	
Ile Thr Phe Gln Tyr Ser Ala Asp Thr Gln Asn Leu Pro Ile Val Glu	
35 40 45	
Ala Pro Lys Gly His Arg Cys Ile Ile Ala Gln Leu Thr Gln Val Gln	
50 55 60	
Arg Gly Lys Thr Leu Cys Met Gln Ala Asp Ser Val Gly Cys Arg Gly	
65 70 75 80	
Gly Lys Arg Tyr Thr Asn Phe Thr Asp Lys Met Phe Pro Gly Phe Glu	
85 90 95	
Cys Phe Leu Ser His Asn Glu Gln Gly Glu Gly Glu Arg Tyr Lys Gln	
100 105 110	
Thr Pro Glu Leu Ala Ala Ala Ala Leu Ala Gln Leu Pro Ala Leu Pro	
115 120 125	
Val Lys Gly Glu Asn Leu Ile Phe Lys Arg Trp Asp Lys Leu Glu Ala	
130 135 140	
Glu Asp Met Pro Glu Val Val Ile Phe Phe Val Ser Ala Asp Ile Leu	
145 150 155 160	
Ser Gly Leu Phe Thr Leu Ala Cys Phe Asp Asn Val Ala Pro Asp Ala	
165 170 175	
Val Ile Ala Pro Phe Gly Ala Gly Cys Ala Ser Ile Ile Tyr His Pro	
180 185 190	
Tyr Arg Glu Gln Leu Asp Arg Thr Asn Arg Ala Val Leu Gly Ser Phe	
195 200 205	
Asp Pro Ser Ala Arg Lys Cys Met Lys Pro Asp Leu Leu Ser Phe Ala	
210 215 220	
Ile Pro Phe Asn Lys Phe Lys Ser Met Val Ser Gln Met Glu Glu Ser	
225 230 235 240	
Phe Leu Lys Thr Ala Thr Trp Asp Val Ile Lys Lys Arg Ile Gly Ser	
245 250 255	
Ser	

<210> 5780
 <211> 155
 <212> PRT
 <213> B.fragilis

<400> 5780

[illegible]

<213> B.fragilis

Met	Glu	Leu	Thr	Leu	Leu	Leu	Ile	Ile	Ala	Ala	Leu	Leu	Val	Ala	Leu
1				5					10					15	
Leu	Val	Leu	Thr	Leu	Thr	Arg	Asn	Asn	Arg	Ala	Gln	Ser	Glu	Glu	Met
			20				25					30			
Gln	Arg	Ala	Leu	Arg	Gln	Gln	Met	Gln	Glu	Asn	Arg	Glu	Glu	Leu	Asn
		35					40					45			
Arg	Ser	Ile	Arg	Glu	Leu	Arg	Met	Glu	Met	Thr	Gln	Thr	Leu	Asn	Gln
	50					55					60				
Gly	Leu	Gln	Gln	Leu	Gln	Asp	Ala	Met	His	Lys	Asn	Met	Met	Thr	Thr
65				70						75					80
Gly	Glu	Leu	Gln	Arg	Gln	Lys	Phe	Asp	Ala	Met	Ala	Arg	Gln	Gln	Glu
				85					90					95	
Thr	Leu	Ile	Gln	Ser	Thr	Glu	Lys	Arg	Leu	Asp	Asp	Met	Arg	Val	Met
			100					105					110		
Val	Glu	Glu	Lys	Leu	Gln	Lys	Thr	Leu	Asn	Glu	Arg	Ile	Gly	Gln	Ser
		115					120					125			
Phe	Glu	Ile	Val	Arg	Ser	Gln	Leu	Glu	Asn	Val	Gln	Lys	Gly	Leu	Gly
	130					135					140				
Glu	Met	Lys	Ser	Leu	Ala	Gln	Asp	Val	Gly	Gly	Leu	Lys	Lys	Val	Leu
145				150						155					160
Ser	Asn	Val	Lys	Met	Arg	Gly	Thr	Phe	Gly	Glu	Val	Gln	Leu	Gly	Ala
				165					170					175	
Leu	Leu	Glu	Gln	Met	Met	Ser	Pro	Glu	Gln	Tyr	Glu	Ala	Asn	Val	Lys
			180			-		185					190		
Thr	Lys	Lys	Ser	Gly	Thr	Glu	Phe	Val	Glu	Phe	Ala	Ile	Lys	Leu	Pro
		195				200					205				
Gly	Lys	Asp	Asp	Ala	Asn	Ser	Thr	Val	Tyr	Leu	Pro	Ile	Asp	Ala	Lys
	210				215						220				
Phe	Pro	Lys	Asp	Val	Tyr	Glu	Gln	Tyr	Tyr	Asp	Ala	Phe	Glu	Ala	Gly
225				230						235					240
Asp	Ala	Ala	Leu	Met	Glu	Ser	Cys	Gly	Arg	Gln	Leu	Glu	Thr	Thr	Ile
				245					250					255	

Lys Lys Met Ala Lys Asp Ile His Asp Lys Tyr Val Asp Pro Pro Phe
 260 265 270
 Thr Thr Asp Phe Ala Ile Leu Phe Leu Pro Phe Glu Ser Ile Tyr Ala
 275 280 285
 Glu Val Ile Arg Arg Thr Ser Leu Val Glu Thr Leu Gln Lys Asp Tyr
 290 295 300
 Lys Ile Val Val Thr Gly Pro Thr Thr Leu Gly Ala Ile Leu Asn Ser
 305 310 315 320
 Leu Gln Met Gly Phe Arg Thr Leu Ala Ile Gln Lys Arg Thr Gly Glu
 325 330 335
 Val Trp Thr Val Leu Gly Ala Val Lys Thr Glu Phe Gly Lys Phe Gly
 340 345 350
 Gly Leu Leu Glu Lys Val Gln Lys Asn Leu Gln Ser Ala Gly Asp Gln
 355 360 365
 Leu Glu Glu Val Met Gly Lys Arg Thr Arg Ala Ile Glu Arg Lys Leu
 370 375 380
 Arg Gln Val Glu Glu Leu Pro His Glu Glu Ser Arg Arg Ile Leu Pro
 385 390 395 400
 Ile Asp Asp Gly Gly Glu Asp Asp
 405

<210> 5782

<211> 140

<212> PRT

<213> B.fragilis

<400> 5782

Cys Asn Val Ala Lys Asn Ala Met Ile Leu Gly Ala Lys Arg Leu Val
 1 5 10 15
 Val Thr Ile Tyr Ile Gln Tyr His Leu Cys Leu Lys Tyr Glu Phe Ala
 20 25 30
 Leu Val Arg Val Lys Glu Leu Leu Pro Leu Val Asp Asp Asn Ile Pro
 35 40 45
 Ala Asn Asp Lys Asp Ala Val Glu Leu Ser Val Met Ser Asp Ile Val
 50 55 60
 Ile Ala Tyr Gly Lys Glu His Tyr Pro Ile Glu Lys Pro Thr Val Ala
 65 70 75 80
 Glu Leu Ile Glu Leu Tyr Leu Glu Glu Lys Gly Met Ser Gln Lys Gln
 85 90 95
 Leu Ala Ile Glu Ile Gly Ile Ser Leu Ser Arg Val Asn Asp Tyr Ile
 100 105 110
 Ala Gly Arg Ser Glu Pro Thr Leu Lys Ile Ala Arg Leu Leu Cys Arg
 115 120 125
 Ile Leu Asn Ile Pro Pro Val Ala Met Leu Gly Phe
 130 135 140

<210> 5783

<211> 251

<212> PRT

<213> B.fragilis

<400> 5783

Gly Lys Tyr Phe Lys Pro Met Gly Arg Ala Phe Glu Tyr Arg Lys Ala
 1 5 10 15
 Thr Lys Leu Lys Arg Trp Gly Asn Met Ala Arg Thr Phe Thr Arg Ile
 20 25 30
 Gly Lys Gln Ile Ala Ile Ala Val Lys Ala Gly Gly Pro Asp Pro Glu
 35 40 45
 Asn Asn Pro His Leu Arg Ala Val Val Ala Thr Ala Lys Arg Glu Asn

50		55		60	
Met	Pro	Lys	Asp	Asn	Val
65		70		75	
Asp	Gln	Lys	Asp	Tyr	Lys
		85		90	
Gly	Ile	Ala	Val	Phe	Val
		100		105	
Val	Ala	Asn	Val	Arg	Ser
		115		120	
Thr	Ser	Gly	Ser	Leu	Asp
		130		135	
Ile	Thr	Lys	Lys	Glu	Gly
145				150	
Ile	Asp	Tyr	Gly	Val	Glu
				165	
Thr	Leu	Tyr	Gly	Asp	Pro
				180	
Glu	Glu	Asn	Gly	Phe	Glu
				195	
Asn	Asp	Glu	Lys	Asp	Leu
				210	
Met	Val	Glu	Arg	Leu	Glu
225				230	
Asn	Met	Lys	Pro	Ala	Asp
				245	

<210> 5784

<211> 790

<212> PRT

<213> B.fragilis

<400> 5784

Gln	Ile	Asn	Phe	Met	Pro	Asp	Tyr	Ile	Glu	Glu	Leu	Asn	Glu	Ser	Gln
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Arg	Ala	Ala	Val	Leu	Tyr	Gly	Asp	Gly	Pro	Ser	Leu	Val	Ile	Ala	Gly
			20					25					30		
Ala	Gly	Ser	Gly	Lys	Thr	Arg	Val	Leu	Thr	Tyr	Lys	Ile	Ala	Tyr	Leu
		35					40					45			
Leu	Glu	Asn	Gly	Tyr	Asn	Pro	Trp	Asn	Ile	Leu	Ala	Leu	Thr	Phe	Thr
		50				55				60					
Asn	Lys	Ala	Ala	Arg	Glu	Met	Lys	Glu	Arg	Ile	Ala	Arg	Gln	Val	Gly
65				70					75					80	
Glu	Gln	Arg	Ala	Arg	Phe	Leu	Trp	Met	Gly	Thr	Phe	His	Ser	Val	Phe
				85					90					95	
Ser	Arg	Ile	Leu	Arg	Ala	Glu	Ala	Ser	His	Ile	Gly	Phe	Thr	Ser	Gln
			100					105						110	
Phe	Thr	Ile	Tyr	Asp	Ser	Ala	Asp	Ser	Lys	Ser	Leu	Ile	Arg	Ser	Ile
		115					120						125		
Ile	Lys	Glu	Met	Gly	Leu	Asp	Glu	Lys	Thr	Tyr	Lys	Pro	Gly	Ser	Val
		130				135					140				
Gln	Ala	Arg	Ile	Ser	Asn	Ala	Lys	Asn	His	Leu	Val	Ser	Pro	Ser	Gly
145				150					155						160
Tyr	Ala	Ala	Asn	Lys	Glu	Ala	Tyr	Glu	Gly	Asp	Leu	Ala	Ala	Lys	Met
			165					170						175	
Pro	Ala	Ile	Arg	Asp	Ile	Tyr	Ser	Arg	Tyr	Trp	Glu	Arg	Cys	Arg	Gln
			180					185						190	
Ala	Gly	Ala	Met	Asp	Phe	Asp	Asp	Leu	Leu	Val	Tyr	Thr	Tyr	Ile	Leu
		195					200					205			
Phe	Arg	Asp	Phe	Pro	Asp	Val	Leu	Ala	Arg	Tyr	Arg	Glu	Gln	Phe	Arg

	210					215					220				
Tyr 225	Val	Leu	Val	Asp	Glu 230	Tyr	Gln	Asp	Thr	Asn 235	Tyr	Ala	Gln	His	Ser 240
Ile	Val	Leu	Gln	Leu 245	Thr	Lys	Glu	Asn	Gln	Arg 250	Val	Cys	Val	Val 255	Gly
Asp	Asp	Ala	Gln	Ser 260	Ile	Tyr	Ser	Phe	Arg	Gly 265	Ala	Asp	Ile	Asp 270	Asn
Ile	Leu	Tyr	Phe	Thr 275	Lys	Ile	Tyr	Pro	Asp	Thr 280	Lys	Val	Phe	Lys 285	Leu
Glu	Gln	Asn	Tyr	Arg 290	Ser	Thr	Gln	Thr	Ile	Val 300	Arg	Ala	Ala	Asn 305	Ser
Leu 305	Ile	Glu	Lys	Asn 310	Glu	Arg	Gln	Ile	Pro	Lys 315	Glu	Val	Phe	Ser 320	Glu
Lys	Glu	Arg	Gly	Glu 325	Ala	Ile	Gly	Val	Phe	Gln 330	Ala	Tyr	Ser	Asp 335	Val
Glu	Glu	Gly	Asp	Ile 340	Val	Thr	Asn	Lys	Ile	Ala 345	Gln	Leu	Arg	Arg 350	Glu
His	Asp	Tyr	Glu	Tyr 355	Ser	Asp	Phe	Ala	Ile	Leu 360	Tyr	Arg	Thr	Asn 365	Ala
Gln	Ser	Arg	Val	Phe 370	Glu	Glu	Ala	Leu	Arg	Lys 375	Arg	Gly	Met	Pro 380	Tyr
Lys 385	Ile	Tyr	Gly	Gly 390	Leu	Ser	Phe	Tyr	Gln	Arg 395	Lys	Glu	Ile	Lys 400	Asp
Ile	Ile	Ala	Tyr	Phe 405	Arg	Leu	Val	Val	Asn	Pro 410	Asn	Asp	Glu	Glu 415	Ala
Phe	Lys	Arg	Ile	Ile 420	Asn	Tyr	Pro	Ala	Arg	Gly 425	Ile	Gly	Asp	Thr 430	Thr
Val	Gly	Lys	Ile	Ile 435	Thr	Ala	Ala	Thr	Asp	Asn 440	Asn	Val	Ser	Leu 445	Trp
Thr	Ala	Leu	Cys	Glu 450	Pro	Ile	Thr	Tyr	Gly	Leu 455	Ser	Ile	Asn	Lys 460	Gly
Thr 465	His	Thr	Lys	Leu 470	Gln	Asp	Phe	Arg	Ala	Leu 475	Ile	Glu	Gln	Phe 480	Met
Ala	Asp	Val	Thr	Val 485	Lys	Asn	Ala	Tyr	Glu	Ile 490	Gly	Thr	Glu	Ile 495	Ile
Arg	Gln	Ser	Gly	Ile 500	Ile	Asn	Glu	Val	Cys	Gln 505	Asp	Asn	Ser	Pro 510	Glu
Asn	Leu	Ser	Arg	Lys 515	Glu	Asn	Ile	Glu	Glu	Leu 520	Val	Asn	Gly	Met 525	Asn
Asp	Phe	Cys	Ala	Met 530	Arg	Gln	Glu	Glu	Gly	Asn 535	Thr	Asn	Val	Ser 540	Leu
Ile 545	Asp	Phe	Leu	Ser 550	Glu	Val	Ser	Leu	Leu	Thr 555	Asp	Gln	Asp	Ser 560	Asp
Lys	Glu	Gly	Asp	Gly 565	Glu	Lys	Val	Thr	Leu	Met 570	Thr	Val	His	Ser 575	Ala
Lys	Gly	Leu	Glu	Phe 580	Arg	Asn	Val	Phe	Val	Val 585	Gly	Met	Glu	Glu 590	Asn
Leu	Phe	Pro	Ser	Gly 595	Met	Ala	Gly	Asp	Ser	Pro 600	Arg	Ala	Met	Glu 605	Glu
Glu	Arg	Arg	Leu	Phe 610	Tyr	Val	Ala	Ile	Thr	Arg 615	Ala	Glu	Glu	His 620	Cys
Phe 625	Leu	Ser	Phe	Ala 630	Lys	Thr	Arg	Phe	Arg	Tyr 635	Gly	Lys	Met	Glu 640	Phe
Gly	Ser	Pro	Ser	Arg 645	Phe	Leu	Arg	Asp	Ile	Asp 650	Thr	Arg	Phe	Leu 655	Gln
Leu	Pro	Gln	Glu	Ala 660	Ala	Leu	Gly	Arg	Ser	Val 665	Asp	Glu	Gly	Ala 670	Gly
Arg	Phe	Arg	Arg	Glu 675	Met	Glu	Glu	Gly	Tyr	Ser 680	Arg	Arg	Ser	Ser 685	Ser

Glu Arg Phe Ser Ala Arg Pro Ser Ala Asp Arg Pro Glu Arg Glu Arg
 690 695 700
 Pro Lys Ala Gln Ile Ile Ala Pro Thr Val Pro Arg Asn Leu Lys Lys
 705 710 715 720
 Val Ser Gly Thr Thr Leu Ser Pro Ser Ser Ala Ser Gly Ala Gly Val
 725 730 735
 Ala Gly Val Gln Pro Gly Gln Thr Ile Glu His Glu Arg Phe Gly Leu
 740 745 750
 Gly Glu Val Ile Arg Val Glu Gly Thr Gly Asp Asn Ala Lys Ala Thr
 755 760 765
 Ile His Phe Arg Asn Ala Gly Asp Lys Gln Leu Leu Leu Arg Phe Ala
 770 775 780
 Arg Phe Lys Val Ile Glu
 785 790

<210> 5785
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 <212> PRT
 <213> B.fragilis

<400> 5785
 Leu Lys Phe Leu Lys Gln Met Leu Lys Glu Lys Ala Gly Glu Ile Ala
 1 5 10 15
 Gly Lys Ile Trp Asn Ala Leu Asn Gly Thr Glu Gly Leu Thr Ala Lys
 20 25 30
 Gln Ile Lys Lys Ala Thr Lys Leu Val Asp Lys Asp Leu Phe Leu Gly
 35 40 45
 Leu Gly Trp Leu Leu Arg Glu Asp Lys Ile Ser Thr Gln Glu Ile Glu
 50 55 60
 Gly Glu Leu Phe Val Thr Leu Asn
 65 70

<210> 5786
 <211> 442
 <212> PRT
 <213> B.fragilis

<400> 5786
 Val Ser Tyr Tyr Leu Asp Gln Tyr Val Phe Tyr Met Ile Phe Phe Lys
 1 5 10 15
 Val Lys Thr Arg Asn Leu Val Phe Ser Phe Ile Leu Leu Ser Leu Leu
 20 25 30
 Ile Val Ser Asp Leu Leu Leu Phe Thr Arg Tyr Ser Asn Trp Gly Ile
 35 40 45
 Lys Thr Asp Ser Ile Trp Leu Phe Ile Ala Ile Ile Asp Val Val Leu
 50 55 60
 Leu Phe Met Leu Ile Ser Phe Phe Arg Phe Lys Arg Ile Val Asn Pro
 65 70 75 80
 Ser Ser Val Tyr Leu Val Phe Val Gly Leu Phe Ala Tyr Ser Val Leu
 85 90 95
 Pro Leu Ser Glu Asn Ile Arg Phe Ser Asn Glu Leu Leu Leu Ile Ile
 100 105 110
 Leu Cys Gly Val Ala Ala Tyr Phe Val Gly Val Phe Cys Leu Pro Gln
 115 120 125
 Ile His Ile Ile Thr Phe Pro Val Phe Thr Asn Arg Thr Lys Arg Ile
 130 135 140
 Phe Tyr Tyr Ile Leu Cys Val Leu Thr Phe Ser Cys Phe Ile Tyr Glu
 145 150 155 160
 Ile Lys Asn Val Gly Tyr Ile Pro Val Phe Val Ile Gly Gln Ser Leu

[illegible]

<400> 5787

Thr	Ile	His	Tyr	Met	Ser	Lys	Lys	Glu	Thr	Leu	Lys	Gln	Gln	Ile	Leu
1				5					10					15	
Asp	Leu	Thr	Arg	Glu	Tyr	Tyr	Lys	Glu	Val	His	Gly	Ser	Ser	Arg	Ser
			20					25					30		
Phe	Glu	Pro	Gly	Lys	Ser	Phe	Val	Asn	Tyr	Gly	Gly	Arg	Tyr	Phe	Asp
		35					40					45			
Asp	Arg	Glu	Leu	Val	Asn	Leu	Val	Asp	Ser	Ser	Leu	Asp	Phe	Trp	Leu
	50					55				60					
Thr	Ala	Gly	Pro	Trp	Ala	Arg	Lys	Phe	Glu	Ile	Arg	Phe	Ala	Glu	Trp
65					70					75				80	
Leu	Gly	Val	Lys	Tyr	Cys	Ser	Leu	Thr	Asn	Ser	Gly	Ser	Ser	Ala	Asn
			85						90					95	
Leu	Leu	Ala	Phe	Met	Ala	Leu	Thr	Ser	Pro	Gln	Leu	Gly	Glu	Arg	Arg
		100						105					110		
Ile	Arg	Arg	Gly	Asp	Glu	Val	Ile	Thr	Val	Ala	Cys	Gly	Phe	Pro	Thr
		115					120					125			
Thr	Val	Thr	Pro	Cys	Ile	Gln	Tyr	Gly	Ala	Val	Pro	Val	Phe	Val	Asp

130		135		140
Val Thr Ile Pro Glu Tyr Asn Ile Asp Val Thr Gln Leu Glu Ala Ala				
145		150		155
Leu Ser Pro Lys Thr Lys Ala Val Met Ile Ala His Ser Leu Gly Asn				160
		165		170
Pro Phe Asp Leu Gln Ala Val Lys Asp Phe Cys Asp Lys His Asn Leu				175
		180		185
Trp Leu Val Glu Asp Asn Cys Asp Ala Leu Gly Ser Thr Tyr Thr Ile				190
		195		200
Asp Gly Val Glu Lys Lys Thr Gly Thr Ile Gly His Ile Gly Thr Ser				205
		210		215
Ser Phe Tyr Pro Pro His His Met Thr Met Gly Glu Gly Gly Ala Val				220
225		230		235
Tyr Thr Asp Asp Pro Leu Leu His Lys Leu Val Asn Ser Phe Arg Asp				240
		245		250
Trp Gly Arg Asp Cys Trp Cys Ile Gly Gly Val Asp Asn Thr Cys Lys				255
		260		265
Tyr Arg Phe Ser Lys Gln Phe Gly Asp Leu Pro Val Gly Tyr Asp His				270
		275		280
Lys Tyr Val Tyr Ser His Phe Gly Tyr Asn Leu Lys Val Thr Asp Met				285
		290		295
Gln Ala Ala Ile Gly Cys Ala Gln Leu Glu Lys Leu Asp Ser Ile Val				300
305		310		315
Glu Ala Arg Arg Ser Asn Phe Ala Tyr Leu Lys Glu Gly Leu Ala Gly				320
		325		330
Thr Ser Gly Leu Ile Leu Pro Glu Ala Gln Lys Asn Ser Asp Pro Ser				335
		340		345
Trp Phe Gly Phe Leu Ile Ser Val Lys Glu Asp Ala Gly Phe Thr Arg				350
		355		360
Asn Asp Leu Ser Gln His Leu Glu Ser Arg Lys Ile Gln Thr Arg Asn				365
		370		375
Leu Phe Ala Gly Asn Leu Leu Lys His Pro Ala Phe Asp Glu Met Arg				380
385		390		395
Ser Thr Gly Glu Gly Tyr Arg Val Ile Gly Asn Leu Glu Gly Thr Asp				400
		405		410
Tyr Val Met Asn His Thr Leu Trp Ile Gly Val Tyr Pro Gly Met Thr				415
		420		425
Arg Ala Met Leu Asp His Met Ile Gly Thr Ile Arg Asp Phe Val Ser				430
		435		440
Ser Arg Lys				445
450				

<210> 5788

<211> 300

<212> PRT

<213> B.fragilis

<400> 5788

Arg Glu His Tyr Leu Met Tyr Val Lys Lys Arg Asn Asn His Phe Lys				
1		5		10
Ile Tyr Asn Leu Met Glu Gln Arg Thr Tyr Leu Pro Leu Val Ser Val				15
		20		25
Ile Thr Val Cys Tyr Asn Ala Thr Thr Val Ile Glu Ala Thr Ile Leu				30
		35		40
Ser Ile Ile Gly Gln Thr Tyr Ser Asn Ile Glu Tyr Ile Ile Ile Asp				45
		50		55
Gly Gly Ser Thr Asp Gly Thr Ile Glu Val Ile Lys Lys Tyr Glu Lys				60
65		70		75
Lys Ile Ser Tyr Trp Val Ser Glu Pro Asp Lys Gly Ile Tyr Asp Ala				80

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044

<400> 5789

Leu	Met	Tyr	Tyr	Leu	Ile	Ile	Leu	Val	Leu	Leu	Phe	Leu	Ala	Glu	Leu
1				5					10					15	
Phe	Tyr	Phe	Arg	Ile	Ala	Asp	Lys	Cys	Asn	Ile	Ile	Asp	Lys	Pro	Asn
			20					25					30		
Glu	Arg	Ser	Ser	His	Thr	Arg	Ile	Thr	Leu	Arg	Gly	Gly	Gly	Ile	Ile
		35					40					45			
Phe	Tyr	Leu	Gly	Ala	Leu	Ala	Tyr	Phe	Leu	Thr	Asn	Gln	Phe	Glu	Tyr
	50					55					60				
Pro	Trp	Phe	Met	Leu	Ala	Leu	Thr	Leu	Ile	Thr	Phe	Ile	Ser	Phe	Val
65				70						75					80
Asp	Asp	Ile	Arg	Ser	Thr	Ser	Gln	Gly	Leu	Arg	Leu	Val	Phe	His	Phe
			85					90					95		
Thr	Ala	Met	Ala	Leu	Met	Phe	Tyr	Gln	Trp	Gly	Leu	Phe	Asn	Leu	Pro
			100					105					110		
Trp	Trp	Thr	Ile	Leu	Val	Ala	Leu	Ile	Val	Cys	Thr	Gly	Ile	Ile	Asn
		115					120					125			
Ala	Tyr	Asn	Phe	Met	Asp	Gly	Ile	Asn	Gly	Ile	Thr	Gly	Gly	Tyr	Ser
	130					135					140				
Trp	Val	Val	Leu	Leu	Ala	Leu	Ala	Phe	Ile	Asn	Val	Gln	Ile	Val	Arg
145				150						155					160
Phe	Val	Glu	Glu	Asp	Leu	Ile	Tyr	Thr	Met	Leu	Cys	Ala	Val	Leu	Val
				165					170					175	
Phe	Asn	Phe	Phe	Asn	Phe	Arg	Lys	Lys	Ala	Lys	Cys	Phe	Ala	Gly	Asp
			180					185					190		
Val	Gly	Ser	Val	Ser	Ile	Ala	Phe	Val	Ile	Leu	Phe	Leu	Ile	Gly	Lys

195	200	205
Leu Ile Ile Arg Thr Glu Asn Phe Ser Trp Ile Val Leu Leu Val Val		
210	215	220
Tyr Gly Val Asp Ser Val Leu Thr Ile Ile His Arg Leu Met Leu His		
225	230	235
Glu Asn Ile Gly Leu Pro His Arg Lys His Leu Tyr Gln Leu Met Ala		
	245	250
Asn Glu Leu Glu Ile Pro His Val Met Val Ser Leu Ile Tyr Met Thr		
	260	265
Ser Gln Ala Ile Ile Ile Val Gly Tyr Leu Leu Thr Pro Gly Trp Gly		
	275	280
Tyr Cys Tyr Leu Leu Gly Thr Ile Val Ile Leu Ser Met Val Tyr Ile		
	290	295
Leu Phe Met Lys Lys Tyr Phe His Leu His Pro Ala Met Lys		
305	310	315

<210> 5790

<211> 495

<212> PRT

<213> B.fragilis

<400> 5790

Ile Asn Glu Tyr Tyr Met Lys Arg Tyr Phe Leu Leu Ser Ala Phe Ala		
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Phe Cys Ser Leu Ala Leu Ser Ala Gln Glu Thr Gln Glu Ile Thr Leu		
	20	25
Asn Glu Ala Ile Ala Leu Ala Arg Thr Gln Ser Val Asp Ala Ala Val		
	35	40
Ala Leu Asn Glu Leu Lys Thr Ala Tyr Trp Glu Tyr Arg Thr Phe Arg		
	50	55
Ala Asp Leu Leu Pro Glu Val Asn Phe Ser Gly Thr Leu Pro Ser Tyr		
65	70	75
Ser Lys Gln Tyr Asn Ser Tyr Gln Asn Glu Asp Gly Ser Tyr Ser Phe		
	85	90
Val Arg Ser Asn Lys Leu Gly Leu Asn Gly Ala Leu Ser Ile Asp Gln		
	100	105
Asn Ile Trp Phe Thr Gly Gly Lys Val Ser Leu Ser Ser Ser Leu Asp		
	115	120
Phe Met Lys Gln Leu Gly Ser Gly Gly Ser Arg Gln Phe Met Ser Val		
	130	135
Pro Ile Ala Leu Gln Leu Thr Gln Pro Ile Phe Gly Val Asn Asn Leu		
145	150	155
Lys Trp Asn Arg Arg Ile Glu Pro Val Arg Tyr Glu Glu Ala Lys Ala		
	165	170
Ala Phe Ile Thr Ala Thr Glu Thr Val Thr Met Asn Ala Ile Thr Tyr		
	180	185
Phe Phe Asn Leu Leu Ser Ala Lys Glu Thr Leu Gly Thr Ala Arg Gln		
	195	200
Asn Gln Val Asn Ala Asp Arg Leu Tyr Glu Val Ala Gly Ala Lys Arg		
	210	215
Lys Met Gly Gln Ile Ser Glu Asn Glu Leu Leu Gln Leu Lys Leu Ala		
225	230	235
Ala Leu Lys Ala Arg Ala Ala Val Thr Asp Ala Glu Ser Asn Leu Asn		
	245	250
Ala His Met Phe Arg Leu Arg Ser Phe Leu Ala Ile Gly Asn Asp Leu		
	260	265
Ile Leu Glu Pro Val Val Pro Glu Ser Ala Pro Asn Leu Lys Met Glu		
	275	280
Tyr Asn Gln Val Leu Asn Lys Ala Leu Glu Arg Asn Ser Phe Ala His		
	285	

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290	295	300
Asn Ile Arg Arg Arg Gln Leu Glu Ala Glu Tyr Glu Val Ala Thr Ala		
305	310	315
Arg Gly Asn Leu Arg Ser Val Asp Leu Phe Ala Asn Val Gly Tyr Thr		320
	325	330
Gly Leu Asn Lys Asp Leu Ser Pro Ala Tyr His Asn Leu Leu Asp Asn		335
	340	345
Gln Val Val Glu Val Gly Val Lys Ile Pro Ile Leu Asp Trp Gly Lys		350
	355	360
Arg Arg Gly Lys Val Arg Val Ala Lys Ser Asn Arg Asp Val Thr Leu		365
	370	375
Ser Lys Ile Lys Lys Glu Gln Met Asp Phe Asp Gln Asp Ile Phe Leu		380
385	390	395
Leu Val Glu His Phe Asn Asn Gln Ala Gln Gln Leu Ser Ile Ala Asn		400
	405	410
Glu Ala Asp Lys Ile Ala Gln Gln Arg Tyr Lys Thr Ser Val Glu Thr		415
	420	425
Phe Leu Ile Gly Lys Ile Asn Thr Leu Asp Leu Asn Asp Ala Gln Asn		430
	435	440
Ser Lys Asp Asp Ala Arg Gln Lys His Ile Asn Glu Leu Tyr Trp Tyr		445
450	455	460
Trp Tyr Tyr Tyr Tyr Gln Leu Arg Ser Leu Thr Leu Trp Asp Phe Gln		465
465	470	475
Asn Asn Thr Pro Leu Glu Ala Asp Phe Glu Asp Ile Val Lys Lys		480
	485	490
		495

<210> 5791

<211> 801

<212> PRT

<213> B.fragilis

<400> 5791

Asn Gly Gly Tyr Asn Glu Glu Lys Ser Gln Ile Cys Lys Arg Gln Arg		
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Arg Met Lys Arg Ile Ile Leu Ala Ala Leu Gly Ser Ala Leu Leu		15
	20	25
Pro Ser Gln Ala Gln Gln Lys Asn Lys Glu Tyr Thr Asn Phe Asn Asp		30
	35	40
Ser Val Phe Ser Ile Asn Glu Val Val Val Ala Thr Asn Tyr Arg Arg		45
50	55	60
Lys Thr Asp Ala Leu Lys Leu Asp Val Pro Ala Lys Phe Ile Pro Ile		65
	70	75
Ser Thr Asn Ser Ile Thr Ser Gly Met Leu Glu Lys Arg Asn Ile Arg		80
	85	90
Asp Ile Gln Glu Ala Ser Arg Phe Leu Pro Gly Val Arg Phe Arg Thr		95
	100	105
Ser Tyr Gly Ala Phe Thr Gln Phe Ser Ile Arg Gly Phe Asp Asn Ser		110
	115	120
Val Ile Met Val Asp Gly Val Arg Asp Glu Arg Ser Ser Ile Asp Asn		125
	130	135
Ser Tyr Pro Phe Met Asp Leu Ser Ala Val Glu Ser Ile Glu Leu Leu		140
145	150	155
Lys Gly Pro Ala Ser Val Leu Tyr Gly Gln Ser Ala Val Gly Gly Val		160
	165	170
Leu Asn Ile Val Arg Lys Ala Pro Val Ser Lys Gln Ser Val Tyr Ala		175
	180	185
Arg Leu Ala Tyr Gly Ser Tyr Tyr Asn Lys Gln Ala Thr Met Ala Leu		190
	195	200
Gly Gly Lys Leu Ile Gly Pro Leu Asn Tyr Arg Ala Ser Val Asn Trp		205

210	215	220
Gln Asp Gln Glu Gly Trp Arg Ser Asn Ala Thr Lys Arg Leu Ser Gly		
225	230	235
Tyr Leu Ala Leu Gly Gly His Leu Thr Glu Asn Asp Glu Leu Asp Ile		240
	245	250
Arg Ile Gly Ala Asn Arg Asp Phe Tyr Pro Thr Glu Ile Gly Leu Pro		255
	260	265
Pro Thr Met Ser Tyr Asp Ile Leu Ser Ala Thr Asp Gly Ser Lys Tyr		270
	275	280
Leu Ser Lys Gly Asp Ala Leu Pro Gly Leu Asn Lys Lys Ala Arg Tyr		285
	290	295
Asn Ser Glu Ser Asp Phe Met Tyr Asn Arg Gly Phe Asn Ala Ser Ala		300
305	310	315
Met Tyr Lys His Thr Phe Ser Glu Ala Phe Lys Leu Met Glu Lys Leu		320
	325	330
Ser Tyr Thr Tyr Asp Asp Ile Asp Tyr Phe Gly Thr Glu Ser Leu Asp		335
	340	345
Tyr Leu Thr Ser Asp Arg Pro Ile Tyr Asp His Tyr Tyr Met Thr Lys		350
	355	360
Asp Lys Gln Gly Asn Asp Thr Lys Lys Tyr Ile Cys Leu Asp Ser Ile		365
	370	375
Tyr Tyr Ser Tyr Pro Leu Arg Phe Ser His Ile Ala Lys Thr Val Asn		380
385	390	395
Asn Gln Leu Glu Ala Ser Gly Lys Phe Tyr Thr Gly Asp Val Ala His		400
	405	410
Asn Tyr Leu Gly Gly Tyr Ser Phe Val Ser Leu Met Arg Asp Ser Tyr		415
	420	425
Met Ala Tyr Gly Asn Gly Ser Thr Gly Ala Thr Gly Pro Gly Thr Thr		430
	435	440
Gly His Ser Ser Val Tyr Asn Pro His Ser Ile Gly Trp Met Glu Ala		445
	450	455
Pro Phe Arg Phe Val Thr Ala Gln Lys Thr Phe Thr His Gly Phe Tyr		460
465	470	475
Leu Gln Asp Leu Val Glu Phe Ser Asp Lys Leu Lys Met Met Leu Ala		480
	485	490
Gly Arg Tyr Asp Leu Phe Met Tyr Lys Thr Ala Asn Leu Asn Thr Ser		495
	500	505
Asp Gly Gly Arg His Tyr Asp Lys Pro Asp Asp Ala Tyr Asn Lys		510
	515	520
Ile Thr Asn Gly Ala Phe Thr Phe Arg Ala Gly Leu Val Tyr Leu Pro		525
	530	535
Ile Glu Lys Leu Ser Val Tyr Gly Ser Tyr Gly Thr Tyr Phe Lys Pro		540
545	550	555
Ile Arg Ala Phe Tyr Asp Ala Asn Thr Ile Tyr Ile Asp Lys Asp Gly		560
	565	570
Lys Glu Phe Thr Pro Val Asn Gly Lys Glu Val Phe Lys Pro Glu Lys		575
	580	585
Gly Phe Gln Val Glu Val Gly Ala Arg Tyr Glu Ile Thr Arg Thr Leu		590
	595	600
Gln Thr Asn Val Ser Leu Phe Tyr Ile Asn Lys Asp Asn Ile Arg Gln		605
	610	615
Thr Leu Ala Asn Lys Gly Asp Ile Ala Asn Gly Val Glu Leu Asp Lys		620
625	630	635
Lys Val Val Gly Gln Val Gly Lys Met Asp Ser Lys Gly Phe Asp Ile		640
	645	650
Asp Ile Thr Trp Ser Pro Ile Tyr Asn Leu Ser Met Ser Ala Gly Tyr		655
	660	665
Gly Tyr Thr Asp Ala Lys Val Arg Asp Leu Ala Asp Asn Pro Tyr Met		670
	675	680
		685

210 215 220
 225 230 235
 240 245 250
 255 260 265
 270 275 280
 285 290 295
 300 305 310
 315 320 325
 330 335 340
 345 350 355
 360 365 370
 375 380 385
 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475
 480 485 490
 495 500 505
 510 515 520
 525 530 535
 540 545 550
 555 560 565
 570 575 580
 585 590 595
 600 605 610
 615 620 625
 630 635 640
 645 650 655
 660 665 670
 675 680 685

Pro Thr Thr Ser Ser Lys Gly Lys Gln Tyr Ala Tyr Ile Pro Lys Asn
 690 695 700
 Thr Phe Tyr Ala Phe Gly Ala Tyr Thr Val Ser Lys Gly Val Leu Lys
 705 710 715 720
 Gly Leu Gly Val Asn Phe Ser Thr Ser Phe Gln Asp Lys Val Tyr Arg
 725 730 735
 Asn Ser Asp Asn Thr Ser Ser Phe Asp Ala Tyr Trp Leu Thr Asp Leu
 740 745 750
 Gly Phe Ser Tyr Thr Leu Lys Ser Asn Val Arg Leu Gly Val Asn Ile
 755 760 765
 Asn Asn Leu Phe Asn Lys Glu Tyr Cys Asn Gln Ala Leu Gly Asn Gln
 770 775 780
 Leu Ile Pro Ser Met Pro Arg Asn Phe Met Leu Ser Ala Ser Tyr Thr
 785 790 795 800
 Leu

<210> 5792
 <211> 94
 <212> PRT
 <213> B.fragilis

<400> 5792
 Val Arg Phe His Lys Ile Lys Glu Ile Phe Leu Phe Glu Leu Tyr Lys
 1 5 10 15
 Tyr Ser Leu Tyr Ile Leu Gly Phe Arg Arg Leu Phe Ser Pro Val Gly
 20 25 30
 Ser Val Cys Thr Ile Gln Ile Tyr Thr Lys Arg Arg Gly Tyr Pro Leu
 35 40 45
 Gly Val Ala Ser His Lys Pro Val Asn Leu Lys Leu Phe Phe Asp Gly
 50 55 60
 Cys Leu Arg Arg Cys Gln Thr Cys Asp Arg His Thr Glu Arg Arg Thr
 65 70 75 80
 Ala Asn Val Ile Gln Thr Tyr Phe Met Ala Glu Leu Asn Arg
 85 90

<210> 5793
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 <212> PRT
 <213> B.fragilis

<400> 5793
 Ser Met Asn Leu Leu Phe Thr Gly Ala Ser Gly Phe Leu Gly Ser Asn
 1 5 10 15
 Leu Tyr Ser Leu Leu Lys Asp Lys Tyr Gln Ile Arg Thr Val Gly Leu
 20 25 30
 Thr Pro Arg Asp Asn Tyr Thr Ile Asn Leu Val Ser Asp Val Pro Lys
 35 40 45
 Leu Asn Ile Lys Tyr Asp Val Val Leu His Ala Ala Gly Lys Ala His
 50 55 60
 Ser Ile Pro Lys Thr Glu Glu Lys Gln Leu Phe Phe Asp Val Asn
 65 70 75 80
 Leu Gln Gly Thr Lys Asn Leu Cys Thr Ala Leu Glu Asn Ser Gly Ile
 85 90 95
 Pro Lys Ala Phe Ile Phe Ile Ser Thr Val Ala Val Tyr Gly Cys Asp
 100 105 110
 Ser Gly Glu Asn Ile Thr Glu Glu His Pro Leu Asn Gly Thr Thr Pro
 115 120 125
 Tyr Ala Leu Ser Lys Ile Lys Ala Glu Lys Tyr Leu Glu Gly Trp Cys

130	135	140
Ala Met His Asn Val Lys	Leu Ser Ile Leu Arg Pro Ser Leu Ile Ala	
145	150	155
Gly Pro Asn Pro Pro Gly	Asn Leu Gly Ala Met Ile Arg Gly Ile Arg	160
	165	170
Asn Gly Lys Tyr Leu Ser Ile Ala	Gly Lys Ala Arg Lys Ser Val	175
	180	185
Leu Met Val Gln Asp Ile Ala	Asn Leu Leu Pro Met Leu Ile Glu Lys	190
	195	200
Gly Gly Ile Tyr Asn Val Cys	Asp Ser Tyr Gln Pro Ser Phe Arg Glu	205
	210	215
Leu Glu Met Val Ile Cys	Asn Gln Leu Asn Lys Lys Arg Pro Ile Ser	220
225	230	235
Ile Pro Tyr Trp Leu Ala Lys	Ser Met Ala Val Ile Gly Asp Cys Leu	240
	245	250
Gly Lys Lys Ala Pro Ile Asn	Ser Leu Lys Leu Arg Lys Ile Thr Ser	255
	260	265
Ser Leu Thr Phe Ser Asn Glu	Lys Ala Val Arg Glu Leu Lys Trp Lys	270
	275	280
Pro Met Asn Val Leu Glu Thr	Phe Leu Ile Glu	285
	290	295

<210> 5794

<211> 478

<212> PRT

<213> B.fragilis

<400> 5794

Ser Gly Cys His Pro Gly Lys Cys His Ser Leu Leu Ser Arg Cys Gly	
1	5
Thr Thr Gln Thr Arg Lys Arg Arg Ile Ala Asp Asp Arg Tyr Thr Asp	
	20
Val Leu Phe Ile Arg Ile Val His Tyr Ile Lys Arg Met Lys Thr Ser	
	35
Glu Thr Thr Arg Pro Thr Leu Ser Ser Leu Pro Val Gly Lys Arg Ala	
	50
Glu Glu Gly Thr Pro His Asn Leu Phe Thr Val Ile Gly Leu Asp Asp	
65	70
Ser Pro Ser Pro Tyr Leu Ser Pro Ser Val Lys Ala Leu Ile Asp Gln	
	85
Gly Cys Val Phe Ser Gly Gly Thr Arg His His Asp Ile Val Ala Pro	
	100
Leu Leu Pro Ala Gly Ala Lys Trp Ile Asp Ile Thr Val Pro Leu Asp	
	115
Gln Val Phe Ala Arg Tyr Ala Gly His Pro His Ile Ile Val Phe Ala	
	130
Ser Gly Asp Pro Ile Phe Phe Gly Phe Ala Asn Thr Ile His Arg Arg	
145	150
Leu Pro Asp Ala Glu Ile Arg Leu Tyr Pro Ser Phe Asn Ser Leu Gln	
	165
Thr Leu Ala His Arg Leu Val Met Pro Tyr Asp Asp Met Arg Thr Ile	
	180
Ser Leu Thr Gly Arg Pro Trp His Gly Phe Asp Arg Ala Leu Ile Glu	
	195
Arg Thr Pro Lys Met Gly Ile Leu Thr Asp Arg Glu His Thr Pro Ala	
	210
Thr Ile Ala Ser Arg Met Leu Asp Tyr Gly Tyr Asn Asp Tyr Thr Met	
225	230
Tyr Ile Gly Glu His Leu Gly His Pro Ala Lys Glu Leu Ile Arg Arg	

				245					250					255			
Met	Thr	Leu	Glu	Glu	Ala	Ala	Ala	Glu	Thr	Phe	Glu	Tyr	Pro	Asn	Cys		
			260						265					270			
Leu	Ile	Leu	Thr	Thr	Gly	Asp	Gly	Leu	Gln	Ser	Val	Asn	Gly	Gly	Ile		
		275					280					285					
Leu	Ser	Pro	Arg	Phe	Phe	Gly	Ile	Pro	Asp	Glu	Ala	Phe	Glu	Leu	Leu		
	290					295					300						
Asp	Gly	Arg	Ala	Arg	Met	Ile	Thr	Lys	Ala	Pro	Ile	Arg	Leu	Leu	Thr		
305					310				315						320		
Leu	Ser	Ala	Leu	Glu	Leu	Asn	Arg	Arg	Thr	Ser	Phe	Trp	Asp	Ile	Gly		
			325						330					335			
Phe	Cys	Thr	Gly	Ser	Val	Ser	Ile	Glu	Ala	Arg	Leu	Gln	Phe	Pro	His		
		340						345					350				
Leu	His	Val	Thr	Ser	Phe	Glu	Ile	Arg	Pro	Glu	Gly	Lys	Arg	Leu	Met		
		355					360					365					
Glu	Ile	Asn	Ser	Arg	Arg	Phe	Gly	Thr	Pro	Gly	Ile	Thr	Thr	Val	Ile		
	370					375					380						
Gly	Asp	Phe	Leu	Glu	Thr	Asp	Thr	Ala	Ile	Tyr	Pro	Cys	Pro	Asp	Ala		
385					390					395				400			
Val	Phe	Ile	Gly	Gly	His	Gly	Gly	Arg	Leu	Lys	Glu	Ile	Ile	Ser	Arg		
			405					410						415			
Val	Arg	His	Lys	Leu	Leu	Pro	Gly	Ala	Arg	Ile	Val	Phe	Asn	Ser	Val		
			420					425					430				
Ser	Glu	Glu	Ser	Lys	Thr	His	Phe	Ile	Glu	Ala	Ala	Asn	Glu	Ser	Gly		
		435					440					445					
Leu	Cys	Phe	Leu	Gly	Gly	Thr	Arg	Val	Ala	Ile	Asn	Glu	Tyr	Asn	Pro		
	450					455					460						
Ile	Glu	Ile	Leu	Val	Ala	Ser	Ala	Pro	Asp	Ser	Pro	Tyr	Leu				
465					470					475							

<210> 5795

<211> 632

<212> PRT

<213> B.fragilis

<400> 5795

Ile	Ala	Arg	His	Pro	Ala	Gly	Glu	Lys	Ile	Leu	Phe	His	Pro	His	His		
1				5					10					15			
Glu	Tyr	Val	Ala	Glu	Leu	Gln	Ser	Phe	Gly	Gly	Met	Tyr	Arg	His	Gln		
			20					25					30				
Ser	His	Leu	Leu	Ala	Val	Ser	Leu	Leu	Val	Gly	Ile	Leu	Ile	Gly	Glu		
		35					40					45					
Gln	Gly	Tyr	Phe	Gly	Glu	Lys	Val	Asp	Gln	Arg	Asn	Val	Arg	Val	Pro		
	50					55					60						
Leu	Phe	Leu	Thr	His	Gly	Thr	Lys	Ile	Ile	His	Thr	Val	His	Gln	Phe		
65					70					75				80			
Leu	Asp	Val	Phe	Phe	Pro	Ala	Glu	Ile	Phe	Gly	Arg	Ile	Val	Leu	Ala		
				85					90					95			
Asp	Phe	Ile	Asp	Asp	Ala	Gly	Leu	Thr	Asp	Asp	Phe	Arg	Thr	Tyr	Phe		
		100						105					110				
Ile	Ser	Ile	Leu	Tyr	Gly	His	Ile	Cys	His	Lys	Leu	Leu	Asp	Gln	Arg		
		115					120					125					
Thr	Lys	Ile	Leu	Gln	Phe	Gly	Met	Cys	Thr	Phe	Ile	Asp	Gly	Lys	Pro		
	130					135					140						
Val	Arg	Asn	Gly	Phe	Ala	Glu	Cys	Gly	Pro	Glu	Ala	Asp	Ile	Val	Ile		
145					150					155					160		
Gly	Gly	Gly	Ser	Asn	Asn	Leu	Ala	His	Arg	Gly	Ile	Ala	Asp	Ala	Ala		
				165					170					175			
Cys	Arg	Ile	Ile	Asp	Asn	Pro	Leu	Glu	Arg	Leu	Phe	Val	Ile	Gly	Val		

	180		185		190										
Asp	His	Gln	Ala	Glu	Val	Gly	Tyr	Asp	Ile	Phe	Asp	Leu	Leu	Ala	Leu
	195						200					205			
Ile	Glu	Arg	Glu	Ala	Ala	Val	Asn	Leu	Ile	Arg	His	Ala	Pro	Phe	Ala
	210					215					220				
Gln	Ser	Leu	Phe	Glu	Asp	Thr	Ala	Leu	Gly	Ile	Gly	Thr	Ile	Lys	Asp
225					230					235					240
Gly	Glu	Val	Gly	Val	Phe	Ile	Ile	Val	Leu	Ala	Thr	Gln	Leu	Arg	Tyr
			245					250						255	
Phe	Ile	Gly	His	Asn	Val	Ala	Phe	Phe	His	Ile	Thr	Val	Ser	Leu	Lys
	260						265					270			
Asp	Pro	Asp	Gly	Leu	Thr	Pro	Phe	Leu	Leu	Gly	Glu	His	Leu	Phe	Gly
	275						280					285			
Asp	Leu	Pro	Leu	Val	Leu	Phe	Asp	Gln	Ala	Val	Gly	Arg	Thr	Asp	Asn
	290				295					300					
Gly	Leu	Gly	Gly	Thr	Val	Val	Leu	Leu	Gln	Leu	Glu	Asp	Phe	Gly	Ile
305				310					315						320
Gly	Ile	Tyr	Leu	Gly	Glu	Ile	Gln	Asn	Ile	Val	Asn	Val	Arg	Ser	Pro
			325				330							335	
Glu	Gly	Val	Asp	Ala	Leu	Arg	Val	Val	Ala	His	His	Ala	Tyr	Thr	Leu
	340						345					350			
Ile	Leu	Leu	Cys	Gln	Leu	Gln	His	Asp	Ala	Val	Leu	Cys	Ile	Val	Gly
	355					360					365				
Val	Leu	Ile	Leu	Val	Asp	Lys	His	Ile	Ala	Glu	Leu	Leu	Ala	Ile	Ala
	370				375					380					
Cys	Gln	His	Val	Gly	Lys	Val	Ala	Glu	Lys	Asp	Ile	Gly	Ile	Asp	Gln
385				390					395						400
Gln	Ile	Val	Glu	Ile	His	Cys	Ser	Gly	Leu	Pro	Ala	Thr	Leu	Pro	Val
			405					410						415	
Ala	Ala	Val	Asp	Ile	Pro	Tyr	Gly	Arg	His	Leu	Cys	Gly	Lys	Ile	Ala
	420						425					430			
Leu	Val	Arg	Leu	Leu	Val	Gly	Cys	Val	Ser	Arg	Arg	Arg	His	Gln	Val
	435					440					445				
Val	Leu	Arg	Ile	Gly	Asp	Ala	Cys	Leu	His	Thr	Ala	Gly	Leu	Ile	Gly
	450				455					460					
Leu	Leu	Val	Lys	Pro	His	Leu	Phe	Asp	Asp	Gly	Thr	Asn	Gln	Ala	Leu
465				470				475							480
Ala	Val	Arg	Arg	Ile	Val	Asp	Gly	Glu	Leu	Arg	Arg	Lys	Ala	Asp	Met
			485				490							495	
Gly	Arg	Leu	Gly	Thr	Lys	Asn	Thr	Gly	Lys	Asn	Arg	Met	Glu	Arg	Thr
	500						505					510			
His	Pro	Lys	Glu	Ser	Cys	Thr	Leu	Leu	Ala	His	Leu	Pro	Gly	Asn	Thr
	515					520						525			
Leu	Leu	His	Phe	Thr	Gly	Ser	Phe	Val	Gly	Glu	Ser	Gln	Cys	Gln	Asp
	530				535						540				
Ile	Pro	Gly	Ile	Val	Thr	Val	Leu	Glu	Gln	Ile	Gly	Tyr	Leu	Ile	Ser
545				550				555							560
Glu	His	Thr	Arg	Leu	Ser	Gly	Thr	Gly	Thr	Gly	Asp	Asp	Gln	Arg	Arg
			565				570							575	
Ala	Ile	Thr	Val	Glu	His	Arg	Arg	Thr	Leu	Ala	Phe	Ile	Lys	Phe	Phe
	580					585						590			
Asp	Ile	Val	Gly	His	Lys	Ile	Tyr	Leu	Leu	Asn	Leu	Tyr	Ser	Arg	Ala
	595					600					605				
Lys	Ile	Glu	Glu	Ser	Leu	Asp	Asn	Ser	Glu	His	Leu	Ala	Pro	Ile	Ser
	610				615						620				
Cys	Tyr	Ile	Phe	Arg	Glu	Met	Lys								
625					630										

<400> 5796

<210> 5797

<211> 68

<212> PRT

<213> B.fragilis

<400> 5797

<210> 5798

<211> 240

<212> PRT

<213> B.fragilis

<400> 5798

Asn	Ile	Ala	Lys	Thr	Met	Ile	Thr	Val	Cys	Met	Ala	Thr	Tyr	Asn	Gly
1				5					10					15	
Glu	Lys	Tyr	Ile	Glu	Glu	Gln	Leu	Glu	Ser	Val	Leu	Met	Gln	Leu	His
			20					25					30		
Ser	Asn	Asp	Glu	Val	Ile	Ile	Ser	Asp	Asp	Gly	Ser	Gly	Asp	Ser	Thr
		35					40					45			
Val	Asp	Leu	Ile	Arg	Thr	Phe	Asn	Asp	Pro	Arg	Ile	Arg	Leu	Leu	Val
	50					55					60				
Gly	Asn	Asn	Phe	Phe	Ser	Pro	Thr	Gln	Asn	Phe	Glu	Asn	Ala	Leu	Lys
65					70					75					80
Tyr	Ala	Lys	Gly	Asp	Tyr	Ile	Phe	Leu	Cys	Asp	Gln	Asp	Asp	Val	Trp
				85					90				95		
Leu	Pro	Asp	Lys	Val	Glu	Ser	Met	Leu	Gln	Tyr	Leu	Leu	Gln	Tyr	Asp
			100					105					110		
Leu	Val	Val	Ser	Asp	Cys	Lys	Val	Val	Asp	Ala	Glu	Leu	Asn	Val	Ile
		115					120					125			

Ser Gln Ser Phe Phe Met Gly Arg Ser Ser Gly Lys Gly Phe Trp Lys
 130 135 140
 Asn Leu Ile Lys Asn Thr Tyr Leu Gly Cys Cys Ile Ala Phe Arg Lys
 145 150 155 160
 Glu Val Leu Gly Tyr Ile Leu Pro Phe Pro Arg Asn Ile Ala Met His
 165 170 175
 Asp Ile Trp Ile Gly Leu Ser Val Glu Met His Ser Asn Ser Phe Phe
 180 185 190
 Leu Pro Arg Gln Leu Ile Leu Tyr Arg Arg His Gly Ser Asn Val Ser
 195 200 205
 Phe Gly Gly Glu Gly Ser Lys Tyr Ser Leu Met Tyr Lys Ile Lys Tyr
 210 215 220
 Arg Leu Cys Met Leu Phe Tyr Leu Leu Lys Arg Lys Tyr Leu Asn Lys
 225 230 235 240

<210> 5799
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 5799
 Ala Arg His Asn Thr Pro Glu Val Arg Gly Pro Thr Ser His Leu Pro
 1 5 10 15
 Ser Arg Ile Ser His Asp Phe Tyr Lys Lys Val Arg Asp Thr Ala Lys
 20 25 30
 Thr Ile Asn His Ser Glu Gln Thr Thr Asn Thr Ile Ser Tyr Ser Thr
 35 40 45
 Asn Ser Ile Asn Tyr Leu Pro Asn Leu Ser Arg Arg Leu Glu Asn Gly
 50 55 60
 Pro Tyr Tyr Arg
 65

<210> 5800
 <211> 409
 <212> PRT
 <213> B.fragilis

<400> 5800
 Ser Ile His Lys Ile Asn Ile Met Glu Lys Asn Ile Phe Lys Leu Asp
 1 5 10 15
 Asn Glu Gln Leu Lys Gly Ile Ala His Ala Phe Arg Glu Lys Val Glu
 20 25 30
 Glu Gly Leu Asn Lys Asn Asn Ala Glu Ile Gln Cys Ile Pro Thr Phe
 35 40 45
 Ile Leu Pro Lys Ala Thr Asp Val Lys Gly Lys Ala Leu Val Leu Asp
 50 55 60
 Leu Gly Gly Thr Asn Tyr Arg Val Ala Ile Val Asp Phe Ser Thr Glu
 65 70 75 80
 Lys Pro Ile Ile Tyr Pro Asn Asn Gly Trp Lys Lys Asp Met Ser Ile
 85 90 95
 Met Lys Ser Pro Gly Tyr Thr Arg Glu Leu Phe Lys Glu Leu Ala
 100 105 110
 Asp Leu Ile Val Glu Ile Lys Arg Glu Glu Glu Met Pro Ile Gly Tyr
 115 120 125
 Cys Phe Ser Tyr Pro Thr Glu Ser Ile Pro Gly Gly Asp Ala Arg Leu
 130 135 140
 Leu Arg Trp Thr Lys Gly Val Asp Ile Arg Glu Met Val Gly Gln Phe
 145 150 155 160
 Val Gly Lys Pro Leu Leu Asp Tyr Leu Asn Glu Lys Asn Lys Ile Arg

165 170 175
 Phe Thr Gly Val Lys Val Leu Asn Asp Thr Ile Ala Ser Leu Phe Ala
 180 185 190
 Gly Leu Thr Asp Lys Ser Tyr Asp Ala Tyr Ile Gly Leu Ile Val Gly
 195 200 205
 Thr Gly Thr Asn Met Ala Thr Phe Ile Pro Ser Asp Lys Ile Thr Lys
 210 215 220
 Leu Asp Pro Glu Cys His Val Gln Gly Leu Ile Pro Val Asn Leu Glu
 225 230 235 240
 Ser Gly Asn Phe Tyr Pro Pro Phe Leu Thr Ala Val Asp Asp Thr Val
 245 250 255
 Asp Ala Thr Ser Asp Ser Leu Gly Lys Gln Arg Phe Glu Lys Ala Val
 260 265 270
 Ser Gly Met Tyr Leu Gly Asp Ile Leu Lys Ala Ala Phe Pro Leu Glu
 275 280 285
 Glu Phe Glu Glu Lys Phe Asp Ala Arg Lys Leu Thr Ala Ile Met Asn
 290 295 300
 Tyr Pro Asp Ile His Lys Asp Ile Tyr Val Gln Val Ala His Trp Ile
 305 310 315 320
 Tyr Asn Arg Ser Ala Gln Leu Val Ala Ala Ser Leu Ala Gly Leu Ile
 325 330 335
 Ala Leu Leu Lys Ser Tyr Asn Arg Asp Ile His Arg Val Cys Leu Ile
 340 345 350
 Ala Glu Gly Ser Leu Phe Trp Ser Glu Ser Arg Lys Asp Lys Asn Tyr
 355 360 365
 Asn Ile Leu Val Met Glu Lys Leu Gln Glu Leu Leu Arg Glu Leu Glu
 370 375 380
 Leu Glu Asp Val Glu Val His Ile Asn Ser Met Asp Asn Ala Asn Leu
 385 390 395 400
 Ile Gly Thr Gly Ile Ala Ala Leu Ser
 405

<210> 5801
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 5801
 Ile Arg His Lys Ala Thr Met Ile Asn Pro Ile Gln Leu Lys Ser Thr
 1 5 10 15
 Asn Thr Ala Ser Ile Leu Glu Asn Asp Leu Ser Asn Ser Leu Lys Ser
 20 25 30
 Arg Asn Asp Thr Asn Leu Asp Lys Leu Gly Thr Leu Val Tyr Ile Gln
 35 40 45
 Phe Ile Glu Thr Asp Glu Thr Pro Phe Ile Thr Leu Asn Val Ile Pro
 50 55 60
 Ser Cys Pro Ala Ala Ala Leu Pro Ile Val Ala Asn Arg Ile Gly Leu
 65 70 75 80
 Lys Asn

<210> 5802
 <211> 439
 <212> PRT
 <213> B.fragilis

<400> 5802
 Glu Asn Ser Asn Lys His Lys Met Ile Lys Gln Tyr Phe Lys Gln Ala
 1 5 10 15

Leu Ala Gln Leu Arg Gln Gln Pro Leu Leu Thr Thr Ile Ser Val Leu
 20 25 30
 Gly Thr Ala Leu Thr Ile Cys Leu Ile Met Val Val Val Met Gln Gln
 35 40 45
 Gln Ile Lys Thr Ala Pro Phe Ala Pro Glu Ser Asn Arg Asn Arg Leu
 50 55 60
 Leu His Val Lys Gln Met Ser Thr Ser Asn Lys Asn Trp Ser Asp Asp
 65 70 75 80
 Gly Ser Ser Asn Gly Pro Met Gly Leu Gln Thr Ala Lys Gly Cys Phe
 85 90 95
 Glu Gly Leu Thr Thr Ala Glu Glu Val Ser Ile Tyr Thr Ile Pro Glu
 100 105 110
 Thr Met Gln Val Ala Leu Pro Arg Gly Val Arg Thr Gly Ile Asp Ala
 115 120 125
 Leu Glu Thr Asp Gly Ala Phe Trp Arg Ile Phe Asp Phe Ser Phe Ile
 130 135 140
 Asp Gly Lys Pro Tyr Ser Asp Ala Glu Val Lys Ser Gly Leu Pro Val
 145 150 155 160
 Ala Val Ile Thr Glu Ser Val Ala Arg Leu Leu Phe Gly Thr Ser His
 165 170 175
 Gln Val Ser Gly Lys Glu Ile Leu Val Asn Asp Ala Val Tyr Arg Ile
 180 185 190
 Ser Gly Val Val Lys Asp Val Ser Ser Met Ala Ser Thr Ala Tyr Ala
 195 200 205
 Gln Ile Trp Val Pro Tyr Ser Ser Thr His Ile Thr Gly Gly Asp Asn
 210 215 220
 Thr Trp Cys Asp Gly Ile Met Gly Val Met Arg Val Val Ile Leu Ala
 225 230 235 240
 Arg Ser Ser Ser Asp Phe Glu Ala Ile Arg Ala Glu Cys Glu Arg Arg
 245 250 255
 Arg Leu Ala Tyr Asn Ala Gly Leu Gly Asp Tyr Phe Val Phe Tyr Arg
 260 265 270
 Gly Gln Pro Asp Asp Gln Leu Thr Met Ser Gln His Lys Trp Ala Asn
 275 280 285
 Val Gln Pro Asp Met Ala Ala Tyr Phe Arg Gln Gln Val Ile Ile Phe
 290 295 300
 Leu Ile Leu Leu Leu Val Pro Ala Ile Asn Leu Ser Ser Met Thr His
 305 310 315 320
 Ser Arg Leu Arg Gln Arg Val Ala Glu Ile Gly Val Arg Arg Ala Phe
 325 330 335
 Gly Ala Thr Arg Gly Gly Val Met Gly Gln Ile Val Ala Glu Asn Leu
 340 345 350
 Val Leu Thr Leu Met Ala Gly Val Val Gly Leu Leu Phe Cys Leu Ile
 355 360 365
 Ile Ser Tyr Cys Trp Gly Gly Thr Leu Phe Ala Asp Ser Arg Leu Met
 370 375 380
 Tyr Leu Asn Thr Ala Pro Val Ile Glu Trp Lys Met Leu Phe Lys Phe
 385 390 395 400
 Ser Thr Phe Ile Tyr Ala Leu Leu Phe Cys Leu Ala Leu Asn Leu Leu
 405 410 415
 Ser Ser Gly Trp Pro Ala Trp Arg Ala Ser Arg Met Ser Ile Ile Asn
 420 425 430
 Ala Leu Ser Gly Lys Leu Asn
 435

<210> 5803

<211> 95

<212> PRT

<213> B.fragilis

<213> B.fragilis

<213> B.fragilis

Asn	Glu	Leu	Lys	Thr	Arg	Ser	Glu	Met	Glu	Lys	Leu	Ile	Ile	Ala	Gly
1				5					10					15	
Arg	Glu	Phe	Asn	Ser	Arg	Leu	Phe	Leu	Gly	Thr	Gly	Lys	Phe	Ser	Ser
			20					25					30		
Asn	Glu	Trp	Met	Glu	Gln	Ser	Ile	Leu	Ala	Ser	Gly	Thr	Glu	Met	Val
			35				40					45			
Thr	Val	Ala	Met	Lys	Arg	Val	Asp	Met	Glu	Ser	Thr	Glu	Asp	Asp	Met

50		55		60
Leu Lys His Ile Val	His Pro His Ile Gln	Leu Leu Pro Asn Thr Ser		
65	70	75	80	
Gly Val Arg Asn Ala	Glu Glu Ala Val Phe	Ala Ala Gln Met Ala Arg		
	85	90	95	
Glu Ala Phe Gly Thr	Asn Trp Leu Lys	Leu Glu Ile His Pro Asp Pro		
	100	105	110	
Arg Tyr Leu Leu Pro	Asp Ser Val Glu Thr	Leu Lys Ala Thr Glu Glu		
	115	120	125	
Leu Val Lys Leu Gly	Phe Val Val Leu Pro	Tyr Cys Gln Ala Asp Pro		
	130	135	140	
Val Leu Cys Lys Gln	Leu Glu Glu Ala Gly	Ala Ala Thr Val Met Pro		
145	150	155	160	
Leu Gly Ala Pro Ile	Gly Thr Asn Lys Gly	Leu Gln Thr Lys Glu Phe		
	165	170	175	
Leu Gln Ile Ile Ile	Glu Gln Ala Gly Ile	Pro Val Val Val Asp Ala		
	180	185	190	
Gly Ile Gly Ala Pro	Ser His Ala Ala Glu	Ala Met Glu Met Gly Ala		
	195	200	205	
Ser Ala Cys Leu Val	Asn Thr Ala Ile Ala	Val Ala Gly Asn Pro Ile		
	210	215	220	
Glu Met Ala Lys Ala	Phe Lys Gln Ala Val	Glu Ala Gly Arg Thr Ala		
225	230	235	240	
Tyr Glu Ala Gly Leu	Gly Met Gln Ala Ile	Gly Phe Val Ala Glu Ala		
	245	250	255	
Ser Ser Pro Leu Thr	Ala Phe Leu Asn Glu			
	260	265		

<210> 5806

<211> 109

<212> PRT

<213> B.fragilis

<400> 5806

Lys Asn Ala Asn Thr	Lys Thr Gln His Pro	Ile Thr Glu Ser Ile Lys
1	5	10
Glu Lys Arg Gly Arg	Lys Thr Gly Ala Gln	Ile Pro Gly Ile Ser
	20	25
Asn Asn Glu Gly Val	Ile Lys Ala Leu Ile	Glu Ser Tyr Ile Leu Asp
	35	40
Ala Lys Glu Gln Asn	Ile Lys Thr Cys Lys	Asp Ser Leu Ala Arg Tyr
	50	55
Ile Glu Glu Lys Glu	Leu Phe Gly Lys Met	Arg Asn Gly Val Phe Lys
65	70	75
Pro Leu Val Phe Ser	Thr Ile Arg Asn Tyr	Val Asn Glu Ile Trp Asn
	85	90
Lys Met Glu Arg Lys	Lys Lys Asn Gln Glu	Gly Lys Arg
	100	105

<210> 5807

<211> 426

<212> PRT

<213> B.fragilis

<400> 5807

Lys Lys Asn Lys Arg	His Asp Ile Leu Met	Lys Asn Ile Phe Lys Asp
1	5	10
Leu Lys Ser Lys Asp	His Lys Arg Tyr Leu	Gly Gly Leu Asp Val Phe
	20	25
		30

Arg Tyr Ile Gly Pro Gly Leu Leu Val Thr Val Gly Phe Ile Asp Pro
 35 40 45
 Gly Asn Trp Ala Ser Asn Phe Ala Ala Gly Ser Glu Phe Gly Tyr Ser
 50 55 60
 Leu Leu Trp Val Val Thr Leu Ser Thr Ile Met Leu Ile Ile Leu Gln
 65 70 75 80
 His Asn Val Ala His Leu Gly Ile Val Thr Gly Leu Cys Leu Ser Glu
 85 90 95
 Ala Ala Thr Gln Tyr Thr Pro Lys Trp Val Ser Arg Pro Ile Leu Gly
 100 105 110
 Thr Ala Val Leu Ala Ser Ile Ser Thr Ser Leu Ala Glu Ile Leu Gly
 115 120 125
 Gly Ala Ile Ala Leu Glu Met Leu Leu Asp Ile Pro Ile Val Trp Gly
 130 135 140
 Ala Val Leu Thr Thr Val Phe Val Ser Ile Met Leu Phe Thr Asn Ser
 145 150 155 160
 Tyr Lys Lys Ile Glu Arg Ser Ile Ile Ala Phe Val Ser Val Ile Gly
 165 170 175
 Leu Ser Phe Ile Tyr Glu Leu Phe Leu Val Asp Ile Asp Trp Pro Met
 180 185 190
 Ala Val Glu Gly Trp Val Thr Pro Ala Ile Pro Lys Gly Ser Met Leu
 195 200 205
 Ile Ile Met Ser Val Leu Gly Ala Val Val Met Pro His Asn Leu Phe
 210 215 220
 Leu His Ser Glu Val Ile Gln Ser His Glu Tyr Asn Lys Gln Asp Thr
 225 230 235 240
 Ala Ser Ile Lys Lys Val Leu Lys Tyr Glu Leu Phe Asp Thr Leu Phe
 245 250 255
 Ser Met Ile Ile Gly Trp Ala Ile Asn Ser Ala Met Ile Leu Leu Ala
 260 265 270
 Ala Ala Thr Phe Phe Lys Ser Gly Ile Gln Val Glu Glu Leu Gln Gln
 275 280 285
 Ala Lys Ser Leu Leu Glu Pro Leu Leu Gly Ser Asn Ala Ala Ile Val
 290 295 300
 Phe Ala Leu Ala Leu Leu Met Ala Gly Ile Ser Ser Thr Ile Thr Ser
 305 310 315 320
 Gly Met Ala Ala Gly Ser Ile Phe Ala Gly Ile Phe Gly Glu Ser Tyr
 325 330 335
 His Ile Lys Asp Ser His Ser Gln Val Gly Val Ile Leu Ser Leu Gly
 340 345 350
 Ile Ala Leu Leu Leu Ile Phe Leu Ser Ala Asp Pro Phe Lys Gly Leu
 355 360 365
 Ile Ile Ser Gln Met Val Leu Ser Ile Gln Leu Pro Phe Thr Val Phe
 370 375 380
 Leu Gln Val Gly Leu Thr Ser Ser Arg Lys Val Met Gly Asp Tyr Val
 385 390 395 400
 Asn Ser Lys Trp Ser Thr Phe Val Leu Tyr Thr Ile Ala Val Ile Val
 405 410 415
 Thr Val Leu Asn Ile Met Leu Leu Phe Ser
 420 425

<210> 5808

<211> 95

<212> PRT

<213> B.fragilis

<400> 5808

Met Asn Asp Lys Pro Ile Thr Asp Thr Lys Ala Met Met Glu Arg Ser
 1 5 10 15

Ile	Phe	Leu	Tyr	Glu	Phe	Val	Lys	Ser	Met	Met	Glu	Thr	Lys	Thr	Val
		20					25						30		
Val	Arg	Thr	Ala	Pro	Gln	Thr	Ile	Gly	Met	Ser	Ser	Asn	Ile	Ser	Ser
		35					40					45			
Ala	Met	Ala	Pro	Pro	Arg	Ile	Ser	Ala	Ser	Asp	Val	Glu	Met	Glu	Ala
	50					55					60				
Ser	Thr	Ala	Val	Pro	Ser	Met	Gly	Arg	Asp	Thr	His	Leu	Gly	Val	Tyr
65					70					75					80
Cys	Val	Ala	Ala	Ser	Glu	Arg	Gln	Ser	Pro	Val	Thr	Ile	Pro	Lys	
				85					90					95	

<210> 5809

<211> 448

<212> PRT

<213> B.fragilis

<400> 5809

Asn	Cys	Leu	Asn	Leu	Ile	Leu	Tyr	Ile	Pro	Ile	Met	Thr	Val	Leu	Arg
1				5					10					15	
Ser	Met	Lys	Asp	Phe	Ser	Ser	Met	Asn	Ile	Thr	Ala	Ser	Ile	Leu	Leu
			20					25					30		
Phe	Val	Thr	Ala	Ile	Ala	Ala	Ala	Val	Ile	Ala	Asn	Ser	Pro	Ala	Ala
		35					40					45			
Ser	Val	Tyr	Gln	Glu	Phe	Leu	Ser	His	Glu	Leu	His	Phe	Arg	Ile	Gly
	50					55					60				
Gly	Phe	Asn	Leu	Leu	Ser	His	Ala	Gly	His	Asn	Leu	Thr	Met	Ile	Glu
65					70					75					80
Phe	Ile	Asn	Asp	Gly	Leu	Met	Thr	Ile	Phe	Phe	Leu	Met	Val	Gly	Leu
				85					90					95	
Glu	Ile	Lys	Arg	Glu	Leu	Leu	Val	Gly	Glu	Leu	Ser	Ser	Phe	Arg	Lys
			100					105					110		
Ala	Ala	Leu	Pro	Phe	Ile	Ala	Ala	Cys	Gly	Gly	Met	Val	Val	Pro	Val
		115					120					125			
Val	Ile	Tyr	Ser	Met	Val	Cys	Ala	Pro	Gly	Thr	Glu	Gly	Gly	Gln	Gly
	130					135					140				
Leu	Ala	Ile	Pro	Met	Ala	Thr	Asp	Ile	Ala	Phe	Ser	Leu	Gly	Val	Leu
145					150					155					160
Ser	Leu	Leu	Gly	Lys	Arg	Val	Pro	Leu	Ser	Leu	Lys	Ile	Phe	Leu	Thr
				165					170					175	
Ala	Phe	Ala	Val	Val	Asp	Asp	Ile	Gly	Gly	Ile	Leu	Val	Ile	Ala	Ile
			180					185					190		
Phe	Tyr	Ser	Ser	His	Val	Ala	Tyr	Glu	Tyr	Leu	Leu	Trp	Ala	Ala	Leu
		195					200					205			
Leu	Tyr	Val	Leu	Leu	Tyr	Phe	Ile	Gly	Lys	Lys	Gly	Ala	Thr	Asn	Lys
	210					215					220				
Ile	Phe	Phe	Leu	Val	Val	Gly	Val	Val	Ile	Trp	Tyr	Leu	Phe	Leu	Gln
225					230					235					240
Ser	Gly	Ile	His	Ser	Thr	Ile	Ser	Gly	Val	Ile	Leu	Ala	Phe	Val	Ile
				245					250					255	
Pro	Ala	Lys	Pro	Gln	Leu	Asn	Val	Gly	Thr	Tyr	Ile	Glu	Arg	Ile	Arg
			260					265					270		
Arg	Ile	Ile	Ser	Thr	Phe	Pro	Glu	Met	Gly	Ala	Asn	Asn	Ile	Val	Leu
		275					280					285			
Thr	Asn	Gln	Gln	Ile	Ala	Lys	Leu	Lys	Glu	Val	Glu	Ser	Ala	Ser	Asp
	290					295					300				
Arg	Val	Ile	Ser	Pro	Leu	Gln	Ser	Leu	Glu	Asp	Asn	Leu	His	Gly	Ala
305					310					315					320
Val	Asn	Tyr	Leu	Val	Leu	Pro	Leu	Phe	Ala	Phe	Val	Asn	Ala	Gly	Val
				325					330					335	

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Met Phe Ser Gly Glu Gly Glu Val Ile Gly Gly Val Thr Leu Ala Val
 340 345 350
 Ala Leu Gly Leu Leu Ala Gly Lys Phe Leu Gly Ile Tyr Ser Phe Thr
 355 360 365
 Trp Leu Ala Val Lys Ser Gly Leu Thr Pro Met Pro Leu Gly Met Asn
 370 375 380
 Trp Lys Asn Ile Ser Gly Val Ala Leu Leu Gly Gly Ile Gly Phe Thr
 385 390 395 400
 Val Ser Leu Phe Ile Ala Asn Leu Ser Phe Gly Ser Ala His Pro Val
 405 410 415
 Leu Leu Asn Gln Ala Lys Leu Gly Val Leu Ser Gly Thr Val Met Ala
 420 425 430
 Gly Ile Leu Gly Tyr Leu Val Leu His Trp Val Leu Pro Lys Arg Arg
 435 440 445

<210> 5810

<211> 337

<212> PRT

<213> B.fragilis

<400> 5810

Pro Asn Leu Asn Ile Met Lys Tyr Phe Val Pro Leu Phe Leu Ser Leu
 1 5 10 15
 Phe Phe Leu Val Phe Met Ser Cys Gly Asn Glu Asp Asn Ala Trp Asp
 20 25 30
 Asn Asn Ile Pro Ile Ile Thr Pro Asn Glu Gln Ser Asp Ser Ser Gly
 35 40 45
 Leu Leu Lys Ser Gln Ile Thr Asp Ile Ile Asn Tyr Ser Lys Ile Asn
 50 55 60
 Phe Asp Glu Asn Phe Asn Asn Thr Glu Leu Tyr Lys Asn Leu Ile Leu
 65 70 75 80
 Ser Pro Lys Trp Glu Asn Val Ser Met Val Leu Gln Lys Gln Asp Thr
 85 90 95
 Leu His Leu Cys Val Pro Leu Leu Ala Gln Asp Asn Pro Glu His Asn
 100 105 110
 Ser Tyr Tyr Leu Phe Ile Ser Asn Ile Lys Ser Ala Asn Ile Ile Arg
 115 120 125
 Phe Thr Ile Ile Gly Leu Pro Glu Asn Phe Trp Asp Ile Ile Asn Ala
 130 135 140
 Pro Ile Thr Arg Ala Gly Ile Ile Asp Ala Gly Trp Ile Pro Glu Val
 145 150 155 160
 Thr Ile Leu Gly Asp Leu Cys Arg Gln Met Ser His Ile Cys Ser Asp
 165 170 175
 Pro Tyr Asp Glu Ala Phe Leu Glu Phe Leu His Ser Lys Trp Leu Lys
 180 185 190
 Glu His Gly Asn Glu Ser Ser Ser Asp Ser Ser Ser Ser Gly Gly Asp
 195 200 205
 Tyr Ser Arg Leu Thr Glu Ala Glu Lys Arg Phe Leu Met Arg His Pro
 210 215 220
 Gln Val Ile Lys Lys Phe His Asp Asn Ala Arg Lys Ala Ser Glu Ala
 225 230 235 240
 Ala Lys Lys Phe Pro Gly Gln His Asn Gly Glu Gly Asp Ala Val Arg
 245 250 255
 His Val Tyr Trp Ser Ala Leu Asn Thr Leu Ser Glu Asn Ala Asn Leu
 260 265 270
 Ala Lys Glu Phe Gly Asp Ala His Glu Gln Asn Pro Gly Gln Asp Ile
 275 280 285
 Ala Glu Lys Asn Met Asp Leu Phe Asn Asn Ser Ile Gly Tyr Gln Leu
 290 295 300

Gly Asp Leu Ala Lys Gln Asn Lys Trp Ser Glu Glu Arg Leu Phe Lys
 305 310 315 320
 Glu Ile Ile Lys Tyr Lys Asn Asp Gly Lys Leu Gln Thr Lys Leu His
 325 330 335
 Pro

<210> 5811
 <211> 142
 <212> PRT
 <213> B.fragilis

<400> 5811
 Ile Leu Ser Asn Arg Asn Thr Phe Asp Pro Thr Tyr Leu Trp Gly Asp
 1 5 10 15
 Asn Leu Ser Ile Asn Pro Leu Asn His Ile Arg Met Lys Gln Lys Lys
 20 25 30
 Arg Pro Ala Ser Gln Thr Glu Ala Met Lys Leu Arg Trp Lys Lys Arg
 35 40 45
 Ile Val Phe Glu Lys Gly Tyr Thr Glu Met Cys Ala Glu Trp Met Ala
 50 55 60
 Glu Arg Leu Glu Ala Leu Thr Asp His Leu Gln Tyr Gly His Ala Ala
 65 70 75 80
 Ile Ala Tyr Gln Lys Gln Asn Gly Asp Phe Arg Leu Val Lys Ala Thr
 85 90 95
 Leu Ile Tyr Tyr Glu Ala Glu Phe His Lys Lys Tyr Asp Pro Thr Lys
 100 105 110
 Ile Glu Gly Ala Val Val Tyr Trp Asn Val Asp Glu Gln Arg Trp Thr
 115 120 125
 Thr Phe Gln Val Glu Asn Phe Met Glu Trp Arg Pro Ile Val
 130 135 140

<210> 5812
 <211> 827
 <212> PRT
 <213> B.fragilis

<400> 5812
 Lys His Lys Lys Leu Asn Asp Met Asn Ile Ser Tyr Asn Trp Leu Lys
 1 5 10 15
 Glu Tyr Val Asn Phe Asp Leu Thr Pro Asp Glu Val Ala Ala Ala Leu
 20 25 30
 Thr Ser Ile Gly Leu Glu Thr Gly Gly Val Glu Glu Val Gln Thr Ile
 35 40 45
 Lys Gly Gly Leu Glu Gly Leu Val Ile Gly Glu Val Leu Thr Cys Val
 50 55 60
 Glu His Pro Asn Ser Asp His Leu His Ile Thr Thr Val Asn Leu Gly
 65 70 75 80
 Asn Gly Glu Pro Thr Gln Ile Val Cys Gly Ala Pro Asn Val Ala Ala
 85 90 95
 Gly Gln Lys Val Val Val Ala Thr Leu Gly Thr Lys Leu Tyr Asp Gly
 100 105 110
 Asp Glu Cys Phe Thr Ile Lys Lys Ser Lys Ile Arg Gly Val Glu Ser
 115 120 125
 Ile Gly Met Ile Cys Ala Glu Asp Glu Ile Gly Ile Gly Thr Ser His
 130 135 140
 Asp Gly Ile Ile Val Leu Pro Glu Asp Ala Val Pro Gly Thr Leu Ala
 145 150 155 160
 Lys Asp Tyr Tyr Asn Val Lys Ser Asp Tyr Val Leu Glu Val Asp Ile

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	

Asn Thr Ser Val Tyr Glu Leu Lys Ala Tyr Val Glu Asn Ile Phe Lys
 645 650 655
 Arg Leu Gly Leu Asp Leu His Ser Leu Val Val Gly Asn Leu Ser Asp
 660 665 670
 Asp Ile Tyr Ser Thr Ala Leu Thr Val Asn Thr Lys Gly Gly Lys Arg
 675 680 685
 Leu Ala Thr Phe Gly Val Val Thr Lys Lys Met Leu Lys Ala Phe Asp
 690 695 700
 Val Asp Asn Glu Val Tyr Tyr Ala Asp Leu Asn Trp Lys Glu Leu Met
 705 710 715 720
 Lys Ala Ile Arg Ser Val Lys Val Ser Tyr Lys Glu Ile Ser Lys Phe
 725 730 735
 Pro Ala Val Lys Arg Asp Leu Ala Leu Leu Leu Asp Lys Lys Val Gln
 740 745 750
 Phe Ala Glu Ile Glu Lys Ile Ala Tyr Glu Thr Glu Lys Lys Leu Leu
 755 760 765
 Lys Glu Val Ser Leu Phe Asp Val Tyr Glu Gly Lys Asn Leu Glu Ala
 770 775 780
 Gly Lys Lys Ser Tyr Ala Val Ser Phe Leu Leu Gln Asp Glu Ser Gln
 785 790 795 800
 Thr Leu Asn Asp Lys Met Ile Asp Lys Ile Met Ser Lys Leu Val Lys
 805 810 815
 Asn Leu Glu Asp Lys Leu Gly Ala Lys Leu Arg
 820 825

<210> 5813
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 5813
 Ser His Lys Asn Arg Arg Arg Ser Ser Leu Leu Glu Cys Gly Arg Thr
 1 5 10 15
 Ala Met Asp Asp Ile Pro Gly Gly Glu Leu His Gly Val Glu Thr Asp
 20 25 30
 Arg Ile Gly Arg His His Arg Leu His Gly Phe Ser Gln Met Asn Asp
 35 40 45
 Phe Tyr Phe Glu Glu Ser Ser Glu Asp Ile Phe Gly Asn Pro Gly
 50 55 60

<210> 5814
 <211> 192
 <212> PRT
 <213> B.fragilis

<400> 5814
 Asn Val Lys Asn Lys Leu Met Glu His Ile Ile His Leu Leu Ile Gly
 1 5 10 15
 Phe Ile Val Leu Ser Phe Leu Leu Lys Thr Gly Phe Tyr Pro Arg Trp
 20 25 30
 Gly Ile Trp Leu Ser Ala Leu Val Tyr Thr Val Phe Leu Ile Cys Ile
 35 40 45
 Gly Pro Trp Ala Thr Glu Gln Ser Pro Thr Glu Ile Asn Ser Leu Leu
 50 55 60
 Ala Ser Ala Pro His Ile Leu Thr Leu Ser Val Tyr Val Thr Leu Glu
 65 70 75 80
 Ala Ser Ile Met Ile Ala Phe Cys Phe Asn Cys Phe Ala Asp Thr Ser
 85 90 95
 Lys Gln Arg Thr Leu Phe Gln Arg Thr Val Thr Tyr Ile Leu Asn Phe

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	

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<400> 5816

Cys Cys Leu Asn Leu Asn Lys Lys Met Asn Met Lys Arg Ile Lys Arg
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Thr Pro Ala Glu Lys Ala Arg Ala Gln Tyr Thr Gly Tyr Leu Val Lys
20 25 30

Glu Pro Met Glu Leu Met Asp Phe Leu Ala Ala Lys Met Pro Asp Ala
 35 40 45
 Ser Arg Thr Lys Leu Lys Ser Leu Leu Ser Lys Arg Ile Val Leu Val
 50 55 60
 Asp Asn Val Ile Thr Thr Gln Phe Asn Phe Pro Leu Gln Pro Gly Met
 65 70 75 80
 Lys Val Leu Ile Ser Lys Asp Lys Asn Lys Lys Glu Phe Arg His Pro
 85 90 95
 Leu Leu Lys Ile Val Tyr Glu Asp Ala Tyr Ile Ile Val Val Glu Lys
 100 105 110
 Lys Glu Gly Leu Leu Ser Val Gly Thr Glu Arg Gln Lys Glu Arg Thr
 115 120 125
 Ala Gln His Ile Leu Ser Glu Tyr Val Gly Arg Ser Gly Arg Gly Asn
 130 135 140
 Arg Ile Tyr Val Val His Arg Leu Asp Arg Asp Thr Ser Gly Leu Met
 145 150 155 160
 Met Phe Ala Lys Asp Glu Lys Thr Gln Tyr Thr Leu Arg Asp His Trp
 165 170 175
 His Asp Ile Val Thr Asp Arg Arg Tyr Val Ala Val Val Thr Gly Glu
 180 185 190
 Met Glu Lys Asp Ser Asp Thr Val Ser Trp Leu Thr Asp Arg Thr
 195 200 205
 Leu Tyr Val Ser Ser Ser Ser Tyr Asp Asp Gly Gly Ser Lys Ser Ile
 210 215 220
 Thr His Tyr Arg Thr Ile Lys Arg Ala Asn Gly Tyr Ser Leu Val Glu
 225 230 235 240
 Leu Arg Leu Glu Thr Gly Arg Lys Asn Gln Ile Arg Val His Met Gln
 245 250 255
 Asp Leu Gly His Pro Leu Ile Gly Asp Gly Arg Tyr Gly Ile Asp Gly
 260 265 270
 Gly Pro Asn Pro Leu Gly Arg Leu Ala Leu His Ala Phe Lys Leu Cys
 275 280 285
 Phe Tyr His Pro Val Thr Asp Gln Leu Met Glu Phe Glu Thr Pro Tyr
 290 295 300
 Pro Pro Thr Phe Lys Lys Leu Phe Leu Lys Lys
 305 310 315

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<211> 601

<212> PRT

<213> B.fragilis

<400> 5817

Lys Tyr Met Lys Thr Ala Ile Ile Val Ile Ser Glu Ala Gly Ile Ala
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 Leu Ala Lys Thr Leu Glu Gln Glu Leu Pro Glu Ser Glu Ile Phe Ser
 20 25 30
 Thr Gly Thr Asp Thr Asp Cys His Ser Ile Ser Asn Leu Gln Glu Ala
 35 40 45
 Val Pro Glu Ile Phe His Lys Phe Asp Ala Ile Ile Phe Ile Gly Ala
 50 55 60
 Met Gly Ile Cys Ile Arg Ala Ile Ala Pro His Ile Glu Asp Lys His
 65 70 75 80
 Lys Asp Pro Ala Val Cys Val Asp Ser Thr Gly Arg Tyr Ala Val
 85 90 95
 Ser Val Leu Ser Gly His Ile Gly Gly Ala Asn Gly Leu Thr Arg Tyr
 100 105 110
 Val Ala Ser Ile Leu Gly Ala Glu Pro Val Ile Thr Thr Arg Ser Asp
 115 120 125

Arg Thr Gly Leu Trp Ala Leu Asp Thr Leu Gly Lys Lys Tyr Gly Trp
 130 135 140
 Gln Thr Val Pro Ala Glu Ser Ser Asp Met Asn His Leu Ile Thr Leu
 145 150 155 160
 Phe Val Asp Cys Lys Pro Thr Ala Leu Leu Asp Ile Arg Asp Glu
 165 170 175
 Gly Thr Thr Gln Leu Glu His Thr Leu Pro Pro His Val Asp Val Phe
 180 185 190
 Tyr Lys Phe Glu Asp Met Asp Leu Arg Lys Tyr Asp Leu Leu Leu Leu
 195 200 205
 Val Thr Pro Phe Ile Tyr Asn Thr Ser Asp Thr Pro Ala Leu Tyr Tyr
 210 215 220
 Val Pro Pro Val Leu His Met Gly Val Gly Leu Ala Arg Asp Ala His
 225 230 235 240
 Pro Val Asp Thr Val Ile Thr His Leu Met Asp Val Val Val Gln Ala
 245 250 255
 Asn Met Ile Pro Leu Ala Ile Arg Thr Val Ser Ser Ile Glu Glu Lys
 260 265 270
 Lys Asp Glu Pro Val Leu Lys Leu Leu Ala Glu Ala Tyr Gln Thr Arg
 275 280 285
 Leu Tyr Thr Ala Ser Gln Leu Ser Lys Ile Glu Val Pro Thr Pro Ser
 290 295 300
 Glu Val Val Asn Lys His Met Gly Thr Pro Ser Val Ser Glu Ala Ser
 305 310 315 320
 Ala Leu Leu Ser Ser Gly Gly Gly Pro Leu Leu Leu Pro Lys Gln Lys
 325 330 335
 Gly Ala Asn Phe Thr Val Ala Ile Ala Met Asp Ala Ala Ser Val Arg
 340 345 350
 Gln Gly His Ile Glu Ile Val Gly Ala Gly Pro Gly Asp Pro Glu Leu
 355 360 365
 Ile Ser Val Arg Gly Arg Arg Phe Leu Glu Glu Ala Asp Leu Ile Leu
 370 375 380
 Tyr Ala Gly Ser Leu Val Pro Arg Glu Leu Thr Glu Cys Ala Lys Ala
 385 390 395 400
 Gly Ala Thr Ile Arg Ser Ser Ala Ser Met Thr Leu Glu Glu Gln Phe
 405 410 415
 Ala Leu Met Lys Glu Phe Tyr Asp Arg Gly Gln Leu Val Val Arg Leu
 420 425 430
 His Thr Gly Asp Pro Cys Ile Tyr Gly Ala Ile Gln Glu Gln Met Asn
 435 440 445
 Phe Phe Asp Gln Tyr Gly Met His Tyr His Ile Thr Pro Gly Ile Ser
 450 455 460
 Ser Phe Gln Ala Ala Ala Ala Ala Leu Gln Ser Gln Phe Thr Ile Pro
 465 470 475 480
 Glu Arg Val Gln Thr Ile Ile Leu Thr Arg Gly Glu Gly Arg Thr Pro
 485 490 495
 Met Pro Glu Lys Glu Lys Leu Ser Leu Leu Ala Arg Ser Gln Ser Thr
 500 505 510
 Met Cys Ile Phe Leu Ser Ala Gly Val Val Asp Gln Val Gln Arg Glu
 515 520 525
 Leu Leu Glu His Tyr Pro Pro Thr Thr Pro Val Ala Ala Cys Tyr His
 530 535 540
 Leu Thr Trp Lys Asp Glu Arg Ile Phe Arg Gly Gln Leu Gln Asp Leu
 545 550 555 560
 Ala Lys Ile Val Asn Glu Asn His Leu Thr Leu Thr Thr Met Ile Val
 565 570 575
 Val Gly Asp Ala Ile Asp Asn Arg Glu Gly Leu Ser Arg Leu Tyr Ser
 580 585 590
 His Gln Phe Lys His Leu Phe Arg Lys

595

600

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 <212> PRT
 <213> B.fragilis

<400> 5818

Gln	Asp	Met	Asn	Tyr	Leu	Glu	Ser	Glu	Ile	Ser	Ala	Leu	Tyr	Ala	Ser
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Ala	His	Glu	Leu	Cys	Tyr	Leu	Gly	Met	Asp	Gly	Arg	Pro	Ile	Tyr	Ser
			20					25					30		
Asp	Gln	Phe	Thr	Arg	Leu	Asn	Arg	Asp	Val	Phe	Ser	Gln	Ala	Asn	Ala
		35					40					45			
Leu	Tyr	Asp	Lys	His	Gly	Asp	Ser	Asp	Glu	Glu	Glu	Ala	Arg	Leu	Cys
	50					55					60				
Leu	Ser	Leu	Leu	Met	Gly	Tyr	Asn	Ala	Thr	Leu	Tyr	Asn	Asn	Gly	Asp
65					70					75				80	
Lys	Glu	Glu	Arg	Ile	Gln	His	Ile	Leu	Asp	Arg	Cys	Trp	Asp	Val	Leu
				85				90						95	
Glu	His	Leu	Pro	Ala	Ser	Leu	Leu	Lys	Val	Gln	Leu	Leu	Val	Tyr	Cys
			100					105					110		
Tyr	Gly	Glu	Val	Phe	Asp	Glu	Glu	Leu	Ala	Arg	Glu	Ala	Gln	Ala	Ile
		115					120					125			
Ile	Asp	Thr	Trp	Gln	Asp	Arg	Glu	Leu	Ser	Glu	Asp	Glu	Arg	Glu	Val
	130					135					140				
Met	Glu	Arg	Leu	Lys	Asp	Val	Gln	Glu	Asn	Pro	Tyr	Pro	Trp	Ser	Glu
145					150					155					160
Val	Glu														

<210> 5819
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 <212> PRT
 <213> B.fragilis

<400> 5819

Glu	Glu	Met	Lys	Gly	Tyr	Trp	Lys	Ile	Leu	Leu	Ile	Leu	Met	Leu	Ala
1			5					10					15		
Val	Gly	Phe	Ala	Ser	Cys	Glu	Asp	Asp	Gln	Gly	Glu	Ile	Glu	Tyr	Val
			20					25				30			
Ile	Thr	Gly	Arg	Ala	Trp	Thr	Gly	Asp	Val	Gly	Met	Asn	Ala	His	Asn
		35					40					45			
Gly	Glu	Pro	Leu	Phe	Ser	Thr	Phe	Glu	Phe	Gly	Asn	Asp	Gly	Phe	Gly
	50					55				60					
Val	Glu	Thr	Gln	Phe	Tyr	Ala	Ser	Asp	Gly	Leu	Leu	Tyr	Asp	Gln	Phe
65					70					75				80	
Arg	Phe	Gln	Trp	Tyr	Trp	Glu	Asp	Ser	Tyr	Asn	Arg	Asn	Leu	Val	Leu
			85					90					95		
Asn	Tyr	Gly	Lys	Asn	Gly	Ile	Ser	Tyr	Met	Asp	Asp	Val	Arg	Ile	Tyr
		100						105				110			
Gly	Asp	Arg	Ile	Thr	Gly	Ala	Phe	Tyr	Leu	Ser	Asp	Asp	Ala	Arg	Gly
	115						120					125			
Phe	Asn	Phe	Glu	Leu	Arg	Met	Glu								
130						135									

<210> 5820
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 <212> PRT

<213> B.fragilis

<400> 5820

Asp	Ile	Ser	Asn	Glu	Asn	Ala	Glu	Arg	Lys	Gln	Glu	Asp	Asn	Met	Lys
1			5						10					15	
Val	Leu	Thr	Leu	Phe	Arg	His	Lys	Arg	Thr	Leu	Tyr	Ile	Ala	Gly	Ser
			20					25					30		
Val	Leu	Leu	Leu	Ala	Ile	Ala	Phe	Thr	Ile	Gly	Tyr	Arg	Tyr	Trp	Met
			35				40					45			
Ala	Pro	Thr	Arg	Ile	Leu	Ile	Val	Asn	Pro	Leu	Pro	Ala	Gln	Ala	Ala
	50					55					60				
Asp	Ile	Val	Leu	Asn	Asn	Asp	Ser	Arg	Asn	Ile	Glu	Val	Thr	Cys	Ile
65				70						75					80
Gln	Thr	Glu	Asn	Leu	Glu	Ser	Phe	Lys	Gly	Tyr	Asp	Ala	Val	Val	Leu
			85						90					95	
Tyr	Gly	Arg	Ser	Leu	Asn	Leu	Asn	Asp	Arg	Gln	Met	Lys	Glu	Ala	Glu
			100					105					110		
Arg	Ala	Ala	Ser	Ala	Gly	Ile	Pro	Leu	Phe	Thr	Ile	Ser	Leu	Arg	Asn
	115						120					125			
Phe	Asn	Thr	Ile	Ile	Asn	Arg	Asn	Ile	Thr	Pro	Glu	Gln	Glu	Ala	Met
130						135					140				
Leu	Met	Gln	Tyr	Phe	Gly	Asp	Ala	Cys	Arg	Gln	Asn	Tyr	Arg	Asn	Gly
145					150					155					160
Leu	Arg	Tyr	Leu	Arg	His	Ile	Ala	Thr	Pro	Thr	Arg	Trp	Asn	Ile	Glu
				165					170					175	
Thr	Phe	Asp	Ala	Pro	Leu	Arg	Leu	Pro	Asn	Asn	Leu	Phe	Tyr	His	Gln
			180					185					190		
Glu	Tyr	Gly	Lys	Tyr	Phe	Glu	Thr	Gln	Lys	Ala	Leu	Glu	Gln	Tyr	Leu
	195						200					205			
Arg	Gln	Lys	Gly	Ile	Phe	His	Glu	Asn	Gly	Pro	Lys	Ile	Ala	Phe	Ile
210						215					220				
Ser	Gly	Val	Ser	Phe	Pro	Met	Glu	Gly	Asn	Arg	Ala	His	Val	Asp	Thr
225					230					235					240
Leu	Ile	Ser	Lys	Met	Thr	Gln	Ala	Gly	Phe	Asn	Val	Tyr	Pro	Ile	Ala
				245					250					255	
Gly	Lys	Glu	Lys	Arg	Glu	Glu	Met	Leu	Arg	Ser	Leu	His	Pro	Asp	Ala
			260					265					270		
Leu	Val	Tyr	Leu	Pro	Met	Gly	Arg	Leu	Gly	Asp	Asp	Ser	Leu	Ile	Asn
			275				280					285			
Trp	Leu	His	Thr	Glu	Asn	Ile	Pro	Ile	Phe	Asn	Pro	Phe	Pro	Leu	Ile
	290					295					300				
Gln	Ser	Arg	Glu	Glu	Trp	Leu	Asp	Pro	Met	Lys	Pro	Val	Ser	Gly	Gly
305					310					315					320
Thr	Leu	Thr	Ala	Arg	Val	Leu	Val	Pro	Glu	Ile	Asp	Gly	Gly	Met	Thr
				325					330					335	
Pro	Leu	Leu	Ile	Ala	Thr	Gln	Asn	Leu	His	Lys	Ser	Gly	Tyr	Tyr	Leu
			340					345					350		
His	Glu	Pro	Glu	Met	Glu	Arg	Val	Asp	Asn	Phe	Ile	Ser	His	Val	His
	355						360					365			
Lys	Tyr	Leu	Asp	Leu	Arg	Thr	Lys	Pro	Asn	Ser	Asp	Lys	Arg	Ile	Ala
	370					375					380				
Ile	Cys	Tyr	Phe	Lys	Thr	Pro	Gly	Lys	Asp	Ala	Leu	Leu	Ala	Ser	Gly
385					390					395					400
Met	Glu	Val	Ile	Pro	Ser	Leu	Tyr	Asn	Phe	Leu	Lys	Arg	Leu	Arg	Thr
				405					410					415	
Glu	Gly	Tyr	Asp	Val	Ser	Gly	Leu	Pro	Ala	Thr	Val	Glu	Glu	Phe	Gly
			420					425				430			
Lys	Gln	Ile	Tyr	Arg	Asp	Gly	Ala	Val	Met	Gly	Ser	Tyr	Ala	Thr	Gly
	435						440					445			

Ala	Gln	Glu	Lys	Phe	Leu	Gln	Thr	Ala	His	Pro	Val	Trp	Leu	Thr	Lys
450						455					460				
Thr	Gln	Tyr	Glu	Lys	Trp	Val	His	Glu	Val	Ile	Glu	Pro	Asp	Lys	Tyr
465					470					475					480
Lys	Glu	Val	Thr	Glu	Arg	Tyr	Gly	Asp	Ala	Pro	Gly	His	Leu	Leu	Thr
				485					490					495	
Gly	Thr	Asn	Pro	Gln	Gly	Glu	Ala	Gln	Leu	Ala	Ile	Ala	Cys	Leu	Arg
		500						505					510		
Phe	Gly	Asn	Ile	Leu	Leu	Phe	Pro	Gln	Pro	Arg	Pro	Ala	Leu	Gly	Asp
		515					520					525			
Asp	Asp	Phe	Lys	Leu	Val	His	Gly	Met	Pro	Val	Ala	Pro	Pro	His	Ser
	530					535					540				
Tyr	Leu	Ala	Pro	Tyr	Leu	Tyr	Val	Gln	Lys	Gly	Phe	Gln	Ala	Asp	Ala
545					550					555					560
Leu	Ile	His	Phe	Gly	Thr	His	Gly	Asn	Leu	Glu	Tyr	Thr	Pro	Gly	Lys
				565					570					575	
Asn	Val	Ala	Leu	Ser	His	Asn	Asp	Trp	Ala	Asp	Ala	Leu	Val	Gly	Asp
			580					585					590		
Leu	Pro	His	Phe	Tyr	Tyr	Tyr	Thr	Thr	Gly	Asn	Val	Gly	Glu	Gly	Ile
		595					600					605			
Ile	Ala	Lys	Arg	Arg	Thr	His	Ala	Val	Leu	Val	Thr	His	Leu	Thr	Pro
610						615						620			
Pro	Tyr	Val	Glu	Ser	Gly	Met	Arg	Gln	Arg	Tyr	Thr	Ser	Leu	Leu	Glu
625					630					635					640
Asp	Ile	His	Lys	Ile	Leu	Ser	Glu	Asp	Ile	Glu	Lys	Asn	Arg	Thr	Leu
				645					650					655	
Gly	Ile	Arg	Ile	Lys	Lys	Glu	Val	Ile	Lys	Leu	Gly	Leu	His	Arg	Asp
			660					665					670		
Leu	Lys	Leu	Asp	Ser	Val	Ser	Ser	Arg	Pro	Tyr	Thr	Ala	Glu	Glu	Leu
		675					680					685			
Glu	Arg	Ile	Asp	Leu	Phe	Ala	Glu	Glu	Ile	Ala	Asn	Glu	Lys	Thr	Ile
690						695					700				
Gly	Ala	Tyr	Tyr	Thr	Leu	Gly	Glu	Thr	Tyr	Ser	Ala	Arg	Asp	Leu	Leu
705					710					715					720
Thr	Thr	Thr	Leu	Ala	Val	Ser	Ala	Asp	Pro	Leu	Ala	Tyr	Gln	Met	Ala
				725					730					735	
Lys	Arg	Asp	Arg	Asp	Lys	Gly	Lys	Ile	Thr	Thr	Glu	Gln	Leu	Gln	Asp
			740					745					750		
Phe	Gly	Tyr	Ile	Thr	His	His	Tyr	Leu	Pro	Ile	Ala	Lys	Gln	Arg	Leu
		755					760					765			
Ile	Pro	Leu	Leu	Gln	Asn	Pro	Pro	Lys	Asp	Thr	Thr	Gly	Ile	Ala	Pro
770					775							780			
Glu	Leu	Gln	Glu	Ala	Leu	Arg	Tyr	His	Ala	Leu	Leu	Val	Ser	Ser	Thr
785					790					795					800
Gly	Asn	Glu	Leu	Asn	Ala	Met	Leu	Arg	Gly	Leu	Lys	Gly	Gly	Thr	Val
				805					810					815	
Phe	Pro	Ala	Pro	Gly	Gly	Asp	Pro	Val	Leu	Asn	Pro	Asn	Val	Leu	Pro
			820					825					830		
Thr	Gly	Arg	Asn	Met	Tyr	Ser	Ile	Asn	Val	Glu	Thr	Thr	Pro	Gly	Ile
		835					840					845			
Leu	Ser	Trp	Glu	Glu	Gly	Lys	Arg	Leu	Ala	Glu	Ala	Thr	Leu	Lys	Ala
850						855					860				
Tyr	Arg	Glu	Asn	His	Ser	Gly	Lys	Tyr	Pro	Arg	Lys	Val	Ser	Tyr	Ser
865					870					875					880
Phe	Trp	Ala	Gly	Glu	Phe	Ile	Thr	Thr	Glu	Gly	Ala	Thr	Leu	Ala	Gln
				885					890					895	
Val	Phe	Trp	Met	Leu	Gly	Val	Glu	Pro	Val	Arg	Asp	Lys	Met	Gly	Arg
			900					905					910		
Val	Val	Asp	Leu	Arg	Leu	Val	Pro	Ser	Ser	Glu	Leu	Gly	Arg	Pro	Arg

915	920	925
Val Asn Val Val Val Gln Val Ser Gly Gln Leu Arg Asp Ile Ala Gly		
930	935	940
Ser Arg Leu Thr Met Leu Thr Asp Ala Val Arg Leu Val Ser Ala Ala		
945	950	955
Asp Asp Lys Ala Tyr Pro Asn Tyr Val Ser Ser Gly Thr Arg Leu Gln		960
	965	970
Glu Lys Leu Leu Val Glu Lys Gly Val Ser Pro Lys Arg Ala Arg Glu		975
	980	985
Met Ser Val Met Arg Val Phe Gly Pro Val Asn Ser Gly Tyr Ser Thr		990
	995	1000
Gly Met Met Ala Tyr Thr Glu Lys Ser Asp Arg Trp Asp His Glu Ser		1005
	1010	1015
Glu Leu Val Asp Gly Tyr Leu Asn Asn Met Gly Ala Ala Tyr Gly Asp		1020
1025	1030	1035
Glu Glu Asp Trp Gly Gly Met Gln Lys Asp Leu Phe Ala Ser Ala Leu		1040
	1045	1050
Ser Glu Thr Asp Val Val Ile Gln Pro Arg Gln Ser Asn Thr Trp Gly		1055
	1060	1065
Pro Leu Ser Leu Asp His Val Tyr Glu Phe Met Gly Gly Leu Ser Leu		1070
	1075	1080
Thr Val Lys Thr Leu Thr Gly Lys Glu Pro Asp Ala Leu Met Ala Asp		1085
	1090	1095
Tyr Arg Asn Arg Asn Asn Lys Arg Met Gln Asn Ile Asn Glu Ala Ile		1100
1105	1110	1115
Ala Val Glu Ala Arg Ala Thr Val Leu Asn Pro Thr Phe Val Lys Glu		1120
	1125	1130
Arg Met Lys Gly Gly Ala Thr Thr Ala Gln Met Phe Gly Glu Ile Phe		1135
	1140	1145
Arg Asn Ile Phe Gly Trp His Ala Thr Arg Pro Ser Ala Met Asp Lys		1150
	1155	1160
Glu Ile Phe Asn Asp Leu Tyr Lys Met Tyr Ile Val Asp Glu Asn His		1165
	1170	1175
Leu Gly Ile Arg Asp Tyr Phe Gln Arg Ile Asn Pro Ala Ser Tyr Gln		1180
1185	1190	1195
Ala Met Thr Ser Val Met Leu Glu Ser Ala Arg Lys Gly Tyr Trp Lys		1200
	1205	1210
Ala Ser Asp Glu Gln Leu Lys Val Thr Ala Arg Leu His Ala Gln Ile		1215
	1220	1225
Thr Arg Glu Ala Gly Ala Ala Cys Thr Glu Phe Val Cys Asp Asn Arg		1230
	1235	1240
Lys Leu Gln Gln Phe Val Glu Gly His Leu Asp Asn Asn Asp Ser Glu		1245
	1250	1255
Ser Tyr Arg Leu Val Met Gln Glu Val His Gln Ala Gly Asn Glu Lys		1260
1265	1270	1275
Gly Lys Asp Ile Val Leu Lys Glu Glu Lys Leu Thr Lys Thr Glu Asn		1280
	1285	1290
Arg Lys Lys Asn Val Val Asn Gly Ile Leu Thr Gly Val Ile Val Leu		1295
	1300	1305
Leu Ala Phe Gly Gly Val Ile Tyr Leu Leu Lys Arg Lys Lys		1310
	1315	1320
		1325

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<211> 173

<212> PRT

<213> B.fragilis

<400> 5821

Leu Val Ala Asp Lys Asp Thr Phe Leu Ile Phe Leu Gln Glu Ile Lys

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Lys Tyr Lys Met Thr Lys Glu Glu Arg Ile Ser Arg Ala Thr Glu Leu			
20	25	30	
Phe Lys Ser Gly Tyr Asn Cys Ser Gln Ser Val Val Ala Ala Phe Ala			
35	40	45	
Asp Met Tyr Gly Phe Thr Glu Glu Gln Ala Leu Arg Met Ala Ala Ser			
50	55	60	
Phe Gly Gly Gly Ile Gly Arg Met Arg Glu Thr Cys Gly Ala Ala Cys			
65	70	75	80
Gly Met Phe Leu Leu Ala Gly Leu Glu Lys Gly Ala Ile Asp Gly Ala			
85	90	95	
Asp Arg Glu Gly Lys Ala Ala Asn Tyr Ala Leu Val Gln Glu Leu Ala			
100	105	110	
Ala Glu Phe Lys Lys Arg Asn Gly Ser Leu Asn Cys Gly Glu Leu Leu			
115	120	125	
Gly Leu Lys Lys Lys Ala Pro Val Ser Ser Glu Pro Glu Ala Arg Thr			
130	135	140	
Glu Gln Tyr Tyr Ala Lys Arg Pro Cys Ser Lys Met Val Glu Glu Ala			
145	150	155	160
Ala Arg Ile Trp Ala Glu Tyr Leu Glu Lys Glu Lys Lys			
165	170		

<210> 5822
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 <212> PRT
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<400> 5822
Ala Glu Asn Glu Thr Arg Thr Arg Asp Pro Asn Leu Gly Lys Val Met
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Leu Tyr Gln Leu Ser Tyr Phe Arg Asn Val Val Pro Arg Thr Gly Leu
20 25 30
Glu Pro Ala Cys Leu Ser Thr His Ala Pro Glu Thr Cys Ala Ser Thr
35 40 45
Asn Ser Ala Thr Trp Ala Leu Thr Asn Gln Lys Pro Ala Val Lys Lys
50 55 60
Asn Gly Glu Glu Gln Ile Thr Asp Val Leu Val Glu Arg Lys Thr Arg
65 70 75 80
Leu Glu Leu Ala Thr Leu Thr Leu Ala Arg Leu Cys Ser Thr Asn
85 90 95

<210> 5823
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<400> 5823
Arg Ile Lys Asp Asn Val Asn Asn Val Tyr Asn Asp Thr Arg Ile Asp
1 5 10 15
Arg Leu Thr Lys His Phe Leu Ala Gln Ala Val Phe Asn Glu Lys Leu
20 25 30
Asn Leu Asn Lys Leu Thr Met Asp Trp Ile Val His Gln Leu Arg Val
35 40 45
His Pro Glu Leu Ala Ile Phe Leu Thr Leu Phe Val Gly Phe Trp Ile
50 55 60
Gly Lys Ile Lys Ile Gly Lys Phe Ser Leu Gly Val Val Thr Ser Val
65 70 75 80
Leu Leu Val Gly Val Leu Val Gly Gln Leu Asp Ile Thr Val Asp Gly
85 90 95

CCDS: B00001

Pro Ile Lys Ser Val Phe Phe Leu Leu Phe Leu Phe Ala Ile Gly Tyr
 100 105 110
 Lys Val Gly Pro Gln Phe Phe Arg Gly Leu Lys Lys Asp Gly Leu Pro
 115 120 125
 Gln Met Gly Phe Ala Ala Ile Met Cys Val Phe Cys Leu Ile Ile Pro
 130 135 140
 Trp Ile Leu Ala Lys Ile Met Gly Tyr Asn Val Gly Glu Ala Ala Gly
 145 150 155 160
 Leu Leu Ala Gly Ser Gln Thr Ile Ser Ala Val Ile Gly Val Ala Gly
 165 170 175
 Asp Thr Ile Asn Glu Leu Asn Ile Ser Pro Glu Thr Lys Glu Ala Tyr
 180 185 190
 Asn Asn Ile Ile Pro Val Ser Tyr Ala Val Thr Tyr Ile Phe Gly Thr
 195 200 205
 Ala Gly Ser Ala Trp Val Leu Gly Ser Leu Gly Pro Arg Leu Leu Gly
 210 215 220
 Gly Leu Asp Lys Val Lys Ala Ala Cys Lys Glu Leu Glu Ala Lys Met
 225 230 235 240
 Gly Asn Asn Glu Ala Asp Gln Pro Gly Phe Met Ala Ala Ala Arg Pro
 245 250 255
 Val Thr Phe Arg Ala Tyr Lys Ile Ala Asn Glu Trp Phe Gly Asp Gly
 260 265 270
 Lys Arg Val Ser Asp Leu Glu Ser Tyr Phe Gln Glu Asn Asp Lys Arg
 275 280 285
 Leu Phe Val Glu Arg Val Arg Gln Ala Gly Val Ile Val Lys Glu Val
 290 295 300
 Ser Pro Thr Phe Val Leu Lys Lys Gly Asp Glu Val Val Leu Ser Gly
 305 310 315 320
 Arg Arg Glu Tyr Val Ile Gly Glu Glu Asp Trp Ile Gly Pro Glu Val
 325 330 335
 Leu Asp Pro Gln Leu Leu Asp Phe Pro Ala Glu Val Leu Pro Val Met
 340 345 350
 Val Thr Arg Lys Thr Val Ala Gly Glu Lys Val Ser Thr Ile Arg Ala
 355 360 365
 Leu Lys Phe Met His Gly Val Ser Ile Arg Arg Ile Lys Arg Ala Gly
 370 375 380
 Ile Asp Ile Pro Val Leu Ala Gln Thr Val Val Asp Ala Gly Asp Met
 385 390 395 400
 Val Glu Leu Val Gly Thr Lys His Glu Val Asp Ala Ala Ala Lys Gln
 405 410 415
 Leu Gly Tyr Ala Asp Arg Pro Thr Asn Gln Thr Asp Met Ile Phe Val
 420 425 430
 Gly Leu Gly Ile Leu Ile Gly Gly Leu Ile Gly Ala Leu Ser Ile His
 435 440 445
 Met Gly Gly Val Pro Ile Ser Leu Ser Thr Ser Gly Gly Ala Leu Ile
 450 455 460
 Gly Gly Leu Phe Phe Gly Trp Leu Arg Ser Lys His Pro Thr Phe Gly
 465 470 475 480
 Arg Ile Pro Glu Pro Ala Leu Trp Ile Leu Asp Asn Val Gly Leu Asn
 485 490 495
 Met Phe Ile Ala Val Val Gly Ile Ala Ala Gly Pro Ser Phe Val Gln
 500 505 510
 Gly Phe Lys Glu Val Gly Leu Ser Leu Phe Ile Val Gly Ala Leu Ala
 515 520 525
 Thr Ser Ile Pro Leu Ile Ala Gly Ile Leu Met Ala Lys Tyr Ile Phe
 530 535 540
 Lys Phe His Pro Ala Leu Val Leu Gly Cys Thr Ala Gly Ala Arg Thr
 545 550 555 560
 Thr Thr Ala Ala Leu Gly Ala Ile Gln Glu Ala Val Glu Ser Glu Thr

100 105 110
 115 120 125
 130 135 140
 145 150 155 160
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475 480
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555 560

565 570 575
 Pro Ala Leu Gly Tyr Thr Val Thr Tyr Ala Val Gly Asn Thr Leu Leu
 580 585 590
 Ile Ile Trp Gly Val Val Ile Val Leu Leu Met
 595 600

<210> 5824
 <211> 595
 <212> PRT
 <213> B.fragilis

<400> 5824
 Tyr Gln Met Asp Lys Ile Arg Asn Phe Cys Ile Ile Ala His Ile Asp
 1 5 10 15
 His Gly Lys Ser Thr Leu Ala Asp Arg Leu Leu Glu Phe Thr Asn Thr
 20 25 30
 Ile Gln Val Thr Glu Gly Gln Met Leu Asp Asp Met Asp Leu Glu Lys
 35 40 45
 Glu Arg Gly Ile Thr Ile Lys Ser His Ala Ile Gln Met Glu Tyr Thr
 50 55 60
 Tyr Lys Gly Glu Lys Tyr Ile Leu Asn Leu Ile Asp Thr Pro Gly His
 65 70 75 80
 Val Asp Phe Ser Tyr Glu Val Ser Arg Ser Ile Ala Ala Cys Glu Gly
 85 90 95
 Ala Leu Leu Ile Val Asp Ala Ser Gln Gly Val Gln Ala Gln Thr Ile
 100 105 110
 Ser Asn Leu Tyr Met Ala Ile Glu His Asp Leu Glu Ile Ile Pro Ile
 115 120 125
 Ile Asn Lys Cys Asp Met Ala Ser Ala Met Pro Glu Glu Val Glu Asp
 130 135 140
 Glu Ile Val Glu Leu Leu Gly Cys Lys Arg Asp Glu Ile Ile Arg Ala
 145 150 155 160
 Ser Gly Lys Thr Gly Met Gly Val Glu Glu Ile Leu Ala Ala Val Ile
 165 170 175
 Glu Arg Ile Pro His Pro Gln Gly Asp Glu Ser Ala Pro Leu Gln Ala
 180 185 190
 Leu Ile Phe Asp Ser Val Phe Asn Ser Phe Arg Gly Ile Ile Ala Tyr
 195 200 205
 Phe Lys Ile Thr Asn Gly Val Ile Arg Ala Gly Asp Lys Val Lys Phe
 210 215 220
 Phe Asn Thr Gly Lys Glu Tyr Val Ala Asp Glu Ile Gly Val Leu Lys
 225 230 235 240
 Met Glu Met Val Pro Arg Lys Glu Leu Arg Thr Gly Asp Val Gly Tyr
 245 250 255
 Ile Ile Ser Gly Ile Lys Thr Ser Lys Glu Val Lys Val Gly Asp Thr
 260 265 270
 Ile Thr His Val Ala Arg Pro Cys Asp Lys Ala Ile Ala Gly Phe Glu
 275 280 285
 Glu Val Lys Pro Met Val Phe Ala Gly Val Tyr Pro Ile Glu Ala Glu
 290 295 300
 Glu Phe Glu Asp Leu Arg Ala Ser Leu Glu Lys Leu Gln Leu Asn Asp
 305 310 315 320
 Ala Ser Leu Thr Phe Gln Pro Glu Ser Ser Leu Ala Leu Gly Phe Gly
 325 330 335
 Phe Arg Cys Gly Phe Leu Gly Leu Leu His Met Glu Ile Val Gln Glu
 340 345 350
 Arg Leu Asp Arg Glu Phe Asp Met Asn Val Ile Thr Thr Val Pro Asn
 355 360 365
 Val Ser Tyr His Ile Tyr Asp Lys Gln Gly Asn Met Thr Glu Val His

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 100

370	375	380
Asn Pro Gly Gly Met	Pro Asp Pro Thr Met	Ile Asp His Ile Glu Glu
385	390	395
Pro Tyr Ile Lys Ala	Ser Ile Ile Thr Thr	Thr Asp Tyr Ile Gly Pro
405	410	415
Ile Met Thr Leu Cys	Leu Gly Lys Arg Gly	Glu Leu Leu Lys Gln Glu
420	425	430
Tyr Ile Ser Gly Asn	Arg Val Glu Leu Phe	Tyr Asn Met Pro Leu Gly
435	440	445
Glu Ile Val Ile Asp	Phe Tyr Asp Arg Leu	Lys Ser Ile Ser Lys Gly
450	455	460
Tyr Ala Ser Phe Asp	Tyr His Pro Asp Gly	Phe Arg Pro Ser Lys Leu
465	470	475
Val Lys Leu Asp Ile	Leu Leu Asn Gly Glu	Ser Val Asp Ala Leu Ser
485	490	495
Thr Leu Thr His Phe	Asp Asn Ala Tyr Asp	Met Gly Arg Arg Met Cys
500	505	510
Glu Lys Leu Lys Glu	Leu Ile Pro Arg Gln	Gln Phe Glu Ile Ala Ile
515	520	525
Gln Ala Ala Ile Gly	Ala Lys Ile Ile Ala	Arg Glu Thr Ile Lys Ala
530	535	540
Val Arg Lys Asp Val	Thr Ala Lys Cys Tyr	Gly Gly Asp Ile Ser Arg
545	550	555
Lys Arg Lys Leu Leu	Glu Lys Gln Lys Lys	Gly Lys Lys Arg Met Lys
565	570	575
Gln Ile Gly Asn Val	Glu Val Pro Gln Lys	Ala Phe Leu Ala Val Leu
580	585	590
Lys Leu Asp		
595		

<210> 5825
 <211> 238
 <212> PRT
 <213> B.fragilis

<400> 5825
Asn Lys Arg Glu Phe Met Glu Arg Tyr Ser Arg Gln Thr Met Leu Pro
1 5 10 15
Glu Ile Gly Glu Ala Gly Gln Leu Lys Leu Lys Ala Ala Lys Val Leu
20 25 30
Ile Val Gly Val Gly Gly Leu Gly Ser Pro Ile Ala Leu Tyr Leu Ala
35 40 45
Gly Ala Gly Val Gly Thr Ile Gly Leu Ala Asp Asp Asp Glu Val Ser
50 55 60
Leu Ser Asn Leu Gln Arg Gln Ile Leu Tyr Thr Glu Glu Glu Val Gly
65 70 75 80
Asp Leu Lys Ala Ile Cys Ala Ser Met Arg Ile Ser Ala Leu Asn Arg
85 90 95
Glu Ile Lys Val Asn Ala Cys Pro Gly Arg Leu Ser Lys Glu Asn Ala
100 105 110
Arg Asp Leu Ile Gly Gln Tyr Asp Ile Ile Val Asp Gly Cys Asp Asn
115 120 125
Phe Ala Thr Arg Tyr Leu Leu Ser Asp Val Cys Ser Glu Leu Gly Lys
130 135 140
Pro Tyr Val Tyr Gly Ala Ile Cys Gly Phe Glu Gly Gln Val Ser Val
145 150 155 160
Phe Asn Tyr Gly Glu Gly Thr Gln Arg Lys Thr Tyr Arg Asp Leu Tyr
165 170 175
Pro Asp Glu Glu Gly Met Leu His Met Pro Pro Pro Pro Lys Gly Val

Met	Pro	Val	Trp	Ser	Ile	Leu	Ser	Leu	Ile	Ile	Lys	Asn	Asn	Met	Lys
1				5					10					15	
Val	Ser	Asp	Tyr	Ile	Ile	Ser	Tyr	Ile	Glu	Ser	Arg	Gly	Val	His	Val
			20					25					30		
Ile	Phe	Gly	Tyr	Ile	Gly	Gly	Met	Ile	Thr	His	Leu	Val	Asp	Ser	Val
			35				40						45		
Ser	Gln	Asn	Pro	Asn	Met	Gln	Phe	Ile	Gln	Thr	Tyr	His	Glu	Gln	Thr
			50			55					60				
Ala	Ala	Ile	Ala	Ala	Glu	Gly	Phe	Ala	Lys	Glu	Ser	Gly	Leu	Phe	Gly
65					70				75					80	
Val	Ala	Ile	Ser	Thr	Ser	Gly	Pro	Gly	Ala	Thr	Asn	Met	Met	Thr	Gly
				85					90					95	
Ile	Ala	Asp	Ala	Tyr	Phe	Asp	Ser	Ile	Pro	Val	Leu	Tyr	Ile	Thr	Gly
			100					105					110		
Gln	Val	Asn	Thr	Tyr	Glu	Tyr	Lys	Tyr	Asp	Lys	Pro	Val	Arg	Gln	Gln
			115				120					125			
Gly	Phe	Gln	Glu	Thr	Asp	Ile	Val	Ser	Met	Val	Lys	Ser	Val	Thr	Lys
			130			135					140				

Tyr Ala Lys Leu Ile Asp Lys Ala Glu Asp Ile Lys Tyr Glu Leu Asp
 145 150 155 160
 Lys Ala Leu Tyr Ile Ala Leu Ser Gly Arg Lys Gly Pro Val Leu Leu
 165 170 175
 Asp Leu Pro Met Asp Ile Gln Arg Glu Ile Asn Gln Glu Thr Leu
 180 185 190
 Ile Gly Tyr Ser Gly Glu Ser Ile Leu Asn Asn Pro Leu Ile Ala Trp
 195 200 205
 Glu Glu Ile Arg Leu Leu Met Glu Ser Ser His Arg Pro Met Leu Leu
 210 215 220
 Leu Gly Ala Gly Cys Cys Asn Ser Asp Met Val Leu Leu Asn Asp Phe
 225 230 235 240
 Ile Arg Arg His His Phe Pro Val Ile Thr Ser Leu Met Gly Arg Gly
 245 250 255
 Ala Ile Asp Glu Thr Tyr Asp Asn Tyr Ile Gly Met Ile Gly Ser Tyr
 260 265 270
 Gly Asn Arg Cys Ala Asn Met Gly Val Ala Asn Ala Asp Leu Leu Ile
 275 280 285
 Ala Leu Gly Thr Arg Leu Asp Thr Arg Gln Thr Gly Ala Arg Leu Asp
 290 295 300
 Gln Phe Leu Ser Asn Gly His Ile Ile His Val Asp Ile Asp Asp Asn
 305 310 315 320
 Glu Leu Glu Tyr His Arg Leu Leu Asn Arg Lys Lys Val Asn Cys Thr
 325 330 335
 Ile Asp Cys Phe Leu Gln Lys Glu Lys Glu Met Pro Ile Ser Leu Gly
 340 345 350
 Asp Ile Ser Glu Trp Asn Phe Phe Leu His Gly Leu Lys Gln Arg Tyr
 355 360 365
 Gly Gln Asp Ala Glu Ile Glu Arg Phe Val Glu Asn Lys Ser Pro Tyr
 370 375 380
 Arg Phe Met Gln Tyr Phe Asp Ser Leu Thr Gln Thr Asp Asp Val Ile
 385 390 395 400
 Cys Ala Asp Ile Gly Gln Asn Gln Met Trp Ala Ala Gln Thr Leu Arg
 405 410 415
 Leu Lys Ser Gly Gln Lys Phe Val Thr Ser Gly Gly Leu Ala Pro Met
 420 425 430
 Gly Phe Ser Leu Pro Val Ala Ile Gly Cys Ser Phe Ala Asn Pro Asn
 435 440 445
 Lys Lys Val Phe Ser Ile Asn Gly Asp Gly Gly Phe His Met Ala Ile
 450 455 460
 Gln Ser Leu Met Leu Ile Ser Gln Tyr Asn Leu Pro Ile Lys Val Ile
 465 470 475 480
 Ile Leu Asn Asn Ala Ser Leu Gly Met Ile Thr Gln Phe Gln His Leu
 485 490 495
 Tyr Phe Asp Asp Arg Met Cys Gly Thr Thr Leu Asn Gly Gly Tyr Arg
 500 505 510
 Val Pro Asp Ile Lys Ser Leu Ser Thr Ala Tyr Gly Leu Pro Tyr Phe
 515 520 525
 Arg Leu Thr Val Asp Arg Leu Asp Asp Pro Asp Leu Arg Glu Glu Met
 530 535 540
 Gln Ala Ala His Asn Cys Ile Ile Glu Cys Val Val Glu Gly Leu Thr
 545 550 555 560
 Ser Val Ser Pro Lys Leu Glu Tyr Asp Lys Pro Ile Ser Lys Pro Leu
 565 570 575
 Pro Leu Leu Pro Glu Glu Glu Tyr Lys Glu Asn Met Leu Leu Glu Ala
 580 585 590

<210> 5828

<211> 262

<212> PRT
 <213> B.fragilis

<400> 5828

Arg	Ala	Val	Trp	Lys	His	Ala	Lys	Phe	Ser	Lys	Ser	Phe	Val	Asp	Ser
1				5					10					15	
Glu	Arg	Ser	Trp	Gln	Ala	Asn	Tyr	Gly	Gln	Leu	Thr	Cys	Gly	His	Cys
			20					25					30		
Asn	Leu	Thr	Tyr	Phe	His	Tyr	Lys	Gly	Trp	Phe	Leu	Ile	Lys	Leu	Ile
		35					40					45			
Ser	Asn	Phe	Ala	Lys	Leu	Asn	Ser	Leu	Thr	Lys	Glu	Met	Lys	Leu	Ile
	50					55					60				
Val	Val	Thr	Thr	Pro	Thr	Phe	Phe	Val	Glu	Glu	Asp	Lys	Ile	Ile	Thr
65					70					75					80
Ala	Leu	Phe	Glu	Glu	Gly	Leu	Asp	Ile	Leu	His	Leu	Arg	Lys	Pro	Glu
				85					90					95	
Thr	Pro	Ala	Met	Tyr	Ser	Glu	Arg	Leu	Leu	Thr	Leu	Ile	Pro	Glu	Lys
			100					105					110		
Tyr	His	Lys	Arg	Ile	Val	Thr	His	Glu	His	Phe	Tyr	Leu	Lys	Glu	Glu
	115						120					125			
Phe	Asn	Leu	Met	Gly	Ile	His	Leu	Asn	Ala	Arg	Asn	Pro	Lys	Glu	Pro
	130					135					140				
His	Asp	Tyr	Ser	Gly	His	Ile	Ser	Cys	Ser	Cys	His	Ser	Val	Glu	Glu
145					150					155					160
Val	Lys	Asn	Lys	Lys	His	Phe	Tyr	Asp	Tyr	Val	Phe	Met	Ser	Pro	Val
				165					170					175	
Tyr	Asp	Ser	Ile	Ser	Lys	Glu	Gly	Tyr	Asn	Ser	Pro	Tyr	Thr	Ala	Glu
			180					185						190	
Glu	Leu	Arg	Leu	Ala	Ala	Lys	Asp	Lys	Ile	Ile	Asp	Asn	Lys	Val	Met
		195					200					205			
Ala	Leu	Gly	Gly	Ile	Thr	Pro	Asp	Asn	Ile	Leu	Glu	Val	Lys	Asp	Phe
	210					215					220				
Gly	Phe	Gly	Gly	Ala	Val	Val	Leu	Gly	Asp	Leu	Trp	Gly	Lys	Phe	Asp
225					230					235					240
Ala	Cys	Ser	Asp	Gln	Asp	Tyr	Leu	Ala	Val	Ile	Glu	His	Phe	Lys	Lys
				245					250					255	
Leu	Lys	Arg	Met	Ala	Asp										
			260												

<210> 5829
 <211> 109
 <212> PRT
 <213> B.fragilis

<400> 5829

Ser	Met	Ala	Arg	Asn	Lys	Leu	Leu	His	Asn	Gln	Asn	Asp	Thr	Asp	Pro
1				5					10					15	
Met	Gly	Thr	Val	Ala	Asn	Leu	Phe	Asp	Val	Ala	Met	Val	Phe	Ala	Val
			20					25					30		
Ala	Leu	Met	Val	Ala	Leu	Val	Ser	Arg	Phe	Asn	Met	Thr	Glu	Ile	Phe
		35					40					45			
Ser	Lys	Glu	Asp	Tyr	Thr	Met	Val	Lys	Asn	Pro	Gly	Gln	Glu	Asn	Met
	50					55					60				
Glu	Ile	Ile	Thr	Lys	Glu	Gly	Lys	Glu	Ile	Lys	Arg	Tyr	Thr	Pro	Ser
65					70					75					80
Glu	Gln	Lys	Glu	Ser	Ser	Gly	Lys	Arg	Gly	Lys	Lys	Val	Gly	Val	Ala
				85					90					95	
Tyr	Glu	Leu	Glu	Asn	Gly	Lys	Ile	Ile	Tyr	Val	Pro	Glu			
			100					105							

<210> 5830
 <211> 307
 <212> PRT
 <213> B.fragilis

<400> 5830

Phe Arg Ser Ser Asn Leu Ile Leu Ile Ser Ile Leu Met Lys Gly Ile
 1 5 10 15
 Val Leu Ala Gly Gly Ser Gly Thr Arg Leu Tyr Pro Ile Thr Lys Gly
 20 25 30
 Val Ser Lys Gln Leu Leu Pro Ile Phe Asp Lys Pro Met Ile Tyr Tyr
 35 40 45
 Pro Ile Ser Val Leu Met Leu Ala Gly Ile Arg Glu Ile Leu Ile Ile
 50 55 60
 Ser Thr Pro Tyr Asp Leu Pro Gly Phe Gln Arg Leu Leu Gly Asp Gly
 65 70 75 80
 Ser Asp Phe Gly Val Arg Phe Glu Tyr Ala Glu Gln Pro Ser Pro Asp
 85 90 95
 Gly Leu Ala Gln Ala Phe Ile Ile Gly Glu Lys Phe Ile Gly Gly Asp
 100 105 110
 Ser Val Cys Leu Val Leu Gly Asp Asn Ile Phe Tyr Gly Gln Ser Phe
 115 120 125
 Thr Arg Met Leu Arg Glu Ala Val His Thr Ala Lys Ser Glu Asn Lys
 130 135 140
 Ala Thr Val Phe Gly Tyr Trp Val Ser Asp Pro Glu Arg Tyr Gly Val
 145 150 155 160
 Ala Glu Phe Asp Lys Ala Gly Asn Val Leu Ser Ile Glu Glu Lys Pro
 165 170 175
 Thr Val Pro Lys Ser Asn Tyr Ala Val Val Gly Leu Tyr Phe Tyr Pro
 180 185 190
 Asn Lys Val Val Glu Val Ala Lys Ser Ile Gln Pro Ser Pro Arg Gly
 195 200 205
 Glu Leu Glu Ile Thr Thr Val Asn Gln Arg Phe Leu Ser Asp Arg Glu
 210 215 220
 Leu Lys Val Gln Leu Leu Gly Arg Gly Phe Ala Trp Leu Asp Thr Gly
 225 230 235 240
 Thr His Asp Ser Leu Ser Glu Ala Ser Thr Phe Ile Glu Val Ile Glu
 245 250 255
 Lys Arg Gln Gly Leu Lys Val Ala Cys Leu Glu Gly Ile Ala Leu Arg
 260 265 270
 Gln Gly Trp Ile Ser Pro Glu Glu Met Lys Ala Leu Ala Gly Pro Met
 275 280 285
 Leu Lys Asn Gln Tyr Gly Gln Tyr Leu Leu Lys Val Ile Asp Glu Leu
 290 295 300
 Ser Ile Lys
 305

<210> 5831
 <211> 478
 <212> PRT
 <213> B.fragilis

<400> 5831

Tyr Asn Ser Arg Ser Thr Val Ala Arg Lys Lys Lys Glu Leu Pro Leu
 1 5 10 15
 Leu Glu Lys Val Thr Ile Thr Asp Val Ala Ala Glu Gly Lys Ala Ile
 20 25 30
 Ala Lys Val Asp Asp Leu Val Val Phe Val Pro Tyr Val Val Pro Gly

35	40	45
Asp Val Val Asp Leu Gln Val Lys Arg Lys Lys Asn Lys Tyr Ala Glu		
50	55	60
Ala Glu Ala Val Lys Phe His Glu Leu Ser Pro Val Arg Ala Val Pro		
65	70	75
Phe Cys Gln His Tyr Gly Val Cys Gly Gly Cys Lys Trp Gln Val Leu		
85	90	95
Pro Tyr Ala Glu Gln Ile Lys Tyr Lys Gln Lys Gln Val Glu Asp Asn		
100	105	110
Leu Arg Arg Ile Gly Lys Ile Glu Leu Pro Glu Ile Ser Pro Ile Leu		
115	120	125
Gly Ser Ala Lys Thr Glu Phe Tyr Arg Asn Lys Leu Glu Phe Thr Phe		
130	135	140
Ser Asn Lys Arg Trp Leu Thr Ala Glu Glu Val Lys Gln Asp Val Lys		
145	150	155
Tyr Asp Gln Met Asn Ala Val Gly Phe His Ile Pro Gly Ala Phe Asp		
165	170	175
Lys Val Leu Ala Ile Glu Lys Cys Trp Leu Gln Asp Asp Ile Ser Asn		
180	185	190
Arg Ile Arg Asn Thr Ile Arg Asp Tyr Ala Tyr Glu His Asn Tyr Ser		
195	200	205
Phe Ile Asn Leu Arg Ser Gln Glu Gly Met Leu Arg Asn Met Ile Val		
210	215	220
Arg Thr Ser Ser Thr Gly Glu Leu Met Val Ile Leu Ile Cys Lys Ile		
225	230	235
Thr Glu Glu His Glu Met Asp Leu Phe Lys Gln Leu Leu Gln Tyr Val		
245	250	255
Ala Asp Gln Phe Pro Glu Ile Thr Ser Leu Leu Tyr Ile Ile Asn Asn		
260	265	270
Lys Cys Asn Asp Thr Ile Asn Asp Leu Asp Val His Val Phe Arg Gly		
275	280	285
Asn Asp His Ile Phe Glu Glu Met Glu Gly Leu Arg Phe Lys Val Gly		
290	295	300
Pro Lys Ser Phe Tyr Gln Thr Asn Ser Glu Gln Ala Tyr Asn Leu Tyr		
305	310	315
Lys Val Ala Arg Asp Phe Ala Gly Leu Thr Gly Asp Glu Leu Val Tyr		
325	330	335
Asp Leu Tyr Thr Gly Thr Gly Thr Ile Ala Asn Phe Val Ser Arg Gln		
340	345	350
Ala Gln Lys Val Ile Gly Ile Glu Tyr Val Pro Glu Ala Ile Glu Asp		
355	360	365
Ala Lys Val Asn Ala Glu Ile Asn Gly Ile Glu Asn Thr Leu Phe Phe		
370	375	380
Ala Gly Asp Met Lys Asp Ile Leu Thr Gln Asp Phe Ile Asn Gln Tyr		
385	390	395
Gly Arg Pro Asp Val Ile Ile Thr Asp Pro Pro Arg Ala Gly Met His		
405	410	415
Gln Asp Val Val Asp Val Ile Leu Phe Ala Glu Pro Lys Arg Ile Val		
420	425	430
Tyr Val Ser Cys Asn Pro Ala Thr Gln Ala Arg Asp Leu Gln Leu Leu		
435	440	445
Asp Val Lys Tyr Arg Val Lys Ala Val Gln Pro Val Asp Met Phe Pro		
450	455	460
His Thr His His Val Glu Asn Val Val Leu Leu Glu Leu Lys		
465	470	475

<210> 5832

<211> 168

<212> PRT

<213> B.fragilis

<400> 5832

Tyr Asn Pro Ser Ser Asn Thr Arg Phe Ile Ala Phe Ile Glu Tyr Asn
 1 5 10 15
 Tyr Gln Asn Met Lys Phe Asn Arg Lys Glu Lys Thr Phe Ile Met Lys
 20 25 30
 Lys Thr Tyr Leu Trp Thr Ala Met Leu Cys Thr Ala Ile Ala Phe Ser
 35 40 45
 Ala Cys Lys Ser Asn Lys Ala Gly Gln Asp Thr Ala Ser Glu Ala Lys
 50 55 60
 Thr Glu Glu Ala Val Ile Pro Gly Ser Asp Lys Asp Glu His Gly Cys
 65 70 75 80
 Val Gly Ser Ala Gly Tyr Val Trp Ser Glu Val Lys Lys Asp Cys Ile
 85 90 95
 Arg Pro Phe Glu Ala Gly Leu Lys Ile Ser Glu Thr Gln Lys Asp Asn
 100 105 110
 Ala Thr Tyr Ala Thr Tyr Ile Val Phe Ala Ala Asp Ser Val Gln Ala
 115 120 125
 Glu Leu Tyr Thr Pro Glu Ser Glu Gly Ser Ile Leu Leu Glu Arg Ala
 130 135 140
 Asp Asn Gln Trp Lys Asn Asp Thr Ile Ser Val Ser Cys Lys Asn Gly
 145 150 155 160
 Gln Trp Ser Ile Ser Lys Gln Lys
 165

<210> 5833

<211> 314

<212> PRT

<213> B.fragilis

<400> 5833

Pro Asp Lys Arg Leu Phe Ile Glu Met Lys Ile Leu Leu Thr Gly Ala
 1 5 10 15
 Thr Gly Phe Leu Gly Ser His Ile Ala Glu Ala Leu Leu Ala Asn Asp
 20 25 30
 Val Asn Leu Met Ile Thr Lys Arg Ser Met Ser Ser Leu Asn Asn Cys
 35 40 45
 Thr Ser Phe Ile Asp His Val Gln Val Ile Asn Ser Asp Asn Pro Ile
 50 55 60
 Trp Ile Ser Gln Ala Cys Ser Phe Ser Pro Asp Ile Ile Ile His Ser
 65 70 75 80
 Ala Trp Thr Gly Val Leu Ser Gly Asn Arg Tyr Asp Trp Pro Val Gln
 85 90 95
 Leu Ser Asn Ile Asp Phe Met Asn Ser Leu Leu Tyr Ile Ala Glu Lys
 100 105 110
 Ser Asn Val Ser Lys Phe Ile Ala Leu Gly Ser Gln Ala Glu Tyr Gly
 115 120 125
 Asp Phe Asp Gly Ile Val Ser Glu Asn Ala Gly Leu Phe Pro Val Asn
 130 135 140
 Ser Tyr Gly Tyr Val Lys Ser Met Val Ser Arg Met Val Gly Ser Phe
 145 150 155 160
 Cys Asp Leu Arg Gly Ile Asp Trp Tyr Trp Leu Arg Val Phe Ser Val
 165 170 175
 Tyr Gly Glu Arg Glu Ser Asn Gln Trp Leu Ile Pro Gly Leu Leu Thr
 180 185 190
 Asn Met Leu Asp Asn Met Ala Gly Met Asp Leu Thr Leu Gly Gln Gln
 195 200 205
 Arg Tyr Ala Tyr Leu Tyr Val Lys Asp Phe Ala Asn Ala Val Met Lys

210 215 220
 Val Cys Ser Gly Lys Thr Pro Cys Gly Val Tyr Asn Leu Ser Ser Ser
 225 230 235 240
 Thr Ala Ile Glu Leu Arg Val Leu Leu Glu His Leu Arg Asp Arg Leu
 245 250 255
 Asn Pro Ala Phe Glu Leu Arg Phe Gly Ala Leu Pro Tyr Arg Ala Gly
 260 265 270
 Gln Pro Met Leu Val Gln Gly Asp Val Ser Lys Phe Val Lys Ser Phe
 275 280 285
 Gly His Phe Glu Asn Thr Pro Leu Asn Ala Gly Leu Glu Tyr Thr Ile
 290 295 300
 Thr Tyr Tyr Lys Lys Gln His Glu Ser Ile
 305 310

<210> 5834
 <211> 86
 <212> PRT
 <213> B.fragilis

<400> 5834
 Arg Arg Arg Arg Val Met Lys Tyr Val Tyr Lys Thr Gln Gly Thr Cys
 1 5 10 15
 Ser Thr Asn Ile Glu Leu Glu Val Glu Asn Asn Ile Val Lys Glu Val
 20 25 30
 Ala Phe Trp Gly Gly Cys Asn Gly Asn Leu Gln Gly Ile Ser Arg Leu
 35 40 45
 Val Thr Gly Met Pro Val Ser Asp Val Ile Thr Lys Leu Glu Gly Ile
 50 55 60
 Arg Cys Gly Ala Arg Ser Thr Ser Cys Pro Asp Gln Leu Cys Arg Ala
 65 70 75 80
 Leu His Glu Met Gly Phe
 85

<210> 5835
 <211> 205
 <212> PRT
 <213> B.fragilis

<400> 5835
 Pro Met Leu Ser Leu Gln Phe Ile Thr His Gln Thr Glu Asn Tyr Ser
 1 5 10 15
 Tyr Leu Glu Ser Ala Arg Met Ala Leu Glu Gly Gly Cys Lys Trp Ile
 20 25 30
 Gln Leu Arg Met Lys Glu Ala Ser Pro Glu Glu Val Glu Ala Val Ala
 35 40 45
 Leu Gln Leu Lys Pro Leu Cys Lys Ala Lys Glu Ala Ile Leu Ile Leu
 50 55 60
 Asp Asp His Val Glu Leu Ala Lys Lys Leu Glu Val Asp Gly Val His
 65 70 75 80
 Leu Gly Lys Lys Asp Met Pro Ile Gly Glu Ala Arg Gln Met Leu Gly
 85 90 95
 Glu Ala Phe Ile Ile Gly Gly Thr Ala Asn Thr Phe Glu Asp Val Lys
 100 105 110
 Leu His Tyr Ala Ala Gly Ala Asp Tyr Leu Gly Ile Gly Pro Phe Arg
 115 120 125
 Phe Thr Thr Thr Lys Lys Asn Leu Ser Pro Val Leu Gly Leu Glu Gly
 130 135 140
 Tyr Thr Ser Ile Leu Ala Gln Met Asn Glu Ala Gly Ile Arg Ile Pro
 145 150 155 160

Val Val Ala Ile Gly Gly Ile Val Ala Glu Asp Ile Pro Ala Ile Met
 165 170 175
 Glu Thr Gly Val Asn Gly Ile Ala Leu Ser Gly Ala Ile Leu Gln Ala
 180 185 190
 Pro Asp Pro Val Glu Glu Thr Lys Arg Ile Leu Asn Ile
 195 200 205

<210> 5836

<211> 297

<212> PRT

<213> B.fragilis

<400> 5836

Tyr Trp Val Gly Tyr Cys Ile Ile Ile Glu Leu Asn Phe Lys Lys Asn
 1 5 10 15
 Thr Tyr Tyr Met Ser Asn Gln Arg Glu Ala Gly Ile Thr Ala Phe Leu
 20 25 30
 Pro Val Tyr Asn Glu Glu Lys Arg Leu Lys Asn Val Leu Glu Cys Phe
 35 40 45
 Gln Trp Cys Asp Glu Ile Leu Leu Leu Asp Lys Gly Ser Val Asp Asp
 50 55 60
 Thr Val Lys Ile Ala Lys Gln Tyr Pro Asn Val Thr Val Leu Thr Lys
 65 70 75 80
 Glu His Thr Glu Lys Tyr Asp Ser Asn Glu Ile Glu Tyr Phe Ile Lys
 85 90 95
 Asn Cys Thr Thr Glu Trp Cys Met Ile Val Thr Ala Ser Asp Leu Ile
 100 105 110
 His Pro Lys Leu Ala Arg Asn Met Lys Glu Leu Ile Asn Asn Cys Asn
 115 120 125
 Phe Glu Tyr Asp Ile Val Ser Val Pro Tyr Lys Pro Tyr Phe Leu Gly
 130 135 140
 Cys Cys Glu Lys Tyr Ser Pro Trp Tyr Thr Glu His Met Asn Lys Ile
 145 150 155 160
 Phe Arg Val Ser Val Leu Asn Leu Asn Leu Asn Ser Val His Ala Val
 165 170 175
 Leu Thr Pro Thr Ser Ser Arg Leu Tyr Gln Ile Pro Phe Thr Asp Pro
 180 185 190
 Lys Val Ala Tyr Tyr His Leu Thr His Gln Ser Ala Glu Ser Ile Ile
 195 200 205
 Glu Arg Asn Val Arg Tyr Trp Lys Gly Glu Ala Ser Ser Ser Glu Pro
 210 215 220
 Leu Ser Leu Ile Asn Lys Ile Ile Ile Arg Thr Val Leu Arg Phe Val
 225 230 235 240
 Phe Leu Arg Gly Gly Leu Phe Lys Gly Arg Gln Ala Leu Ala Leu Phe
 245 250 255
 Tyr Ser Phe Leu Ser Tyr Tyr Met Met Thr Tyr Val Cys Lys Trp Glu
 260 265 270
 Tyr Gln Asn Gly Glu Val Glu Ser Ile Tyr Thr Ala Leu Gln Lys Glu
 275 280 285
 Ile Val Asp Leu Trp Ser Lys Pro Lys
 290 295

<210> 5837

<211> 119

<212> PRT

<213> B.fragilis

<400> 5837

Ala Asn Asn Gly His Trp Ala Leu Ser Phe Ser Ser Thr Met Lys Tyr

1 5 10 15
 Lys Glu His Ile Ser Thr Asn Thr Phe Ala Ile Ala Pro Tyr Ala Arg
 20 25 30
 Phe Ser Tyr Tyr Glu Asn Lys Ile Val Arg Leu Phe Val Asp Gly Gly
 35 40 45
 Phe Gly Phe Ala Thr Thr Lys Val Lys Asp Gly Gly Asp Ala Val Asn
 50 55 60
 Gly Phe Glu Ile Gly Leu Lys Pro Gly Ile Ala Ile Lys Leu Asn Gln
 65 70 75 80
 His Phe Ser Leu Val Ala Lys Cys Gly Phe Leu Gly Tyr Lys Asp Asp
 85 90 95
 Tyr Met Gly Asn Gly Phe Gly Phe Ser Ala Ser Ser Glu Asp Leu Thr
 100 105 110
 Phe Gly Phe His Tyr Glu Phe
 115

<210> 5838

<211> 96

<212> PRT

<213> B.fragilis

<400> 5838

Val Cys Leu Gly Ile Asn Glu Ser Lys Tyr Lys Glu Gly Cys Val Arg
 1 5 10 15
 Glu Lys Glu Lys Thr Glu Glu Ile His Asn Pro Phe Gly Ser Thr Asn
 20 25 30
 Cys Ile Arg Phe Leu Gly Tyr Asn Leu Ser His Arg Val Ala Pro Leu
 35 40 45
 Cys Leu Tyr Gly Gly Lys Val Ser Glu Lys Glu Asn Lys Lys Lys Val
 50 55 60
 Asn Arg Gly Leu Phe His Arg Gly Val Met Arg Asn Leu Phe Leu Pro
 65 70 75 80
 Phe Leu Lys Thr His His Lys Lys His Arg Val Thr Gln Arg Arg Phe
 85 90 95

<210> 5839

<211> 118

<212> PRT

<213> B.fragilis

<400> 5839

Arg Gln Arg Gly Ala Thr Arg Trp Leu Arg Leu Tyr Pro Lys Asn Leu
 1 5 10 15
 Met Gln Leu Val Leu Pro Lys Gly Leu Cys Ile Ser Ser Val Phe Ser
 20 25 30
 Phe Ser Arg Thr His Pro Ser Leu Tyr Leu Leu Ser Phe Ile Pro Lys
 35 40 45
 His Thr Tyr Thr Asn Met Lys Val Gln Val Asn Asn Lys Glu Val Glu
 50 55 60
 Thr Ala Ala Ser Thr Leu Ala Gln Leu Ala Thr Gln Leu Gln Leu Pro
 65 70 75 80
 Glu Asn Gly Val Ala Ile Ala Val Asn Asn Arg Met Ile Pro Arg Pro
 85 90 95
 Gln Trp Asp Gly Phe Gly Leu Gln Glu Asn Asp Asn Leu Ile Val Ile
 100 105 110
 Lys Ala Ala Cys Gly Gly
 115

<210> 5840

[illegible]

Asn	Arg	Ile	Met	Asp	Lys	Lys	Arg	Val	Tyr	Thr	Phe	Gly	Asn	Gly	Leu
1				5					10					15	
Ala	Glu	Gly	Lys	Ala	Gly	Met	Arg	Asn	Leu	Leu	Gly	Gly	Lys	Gly	Ala
			20					25					30		
Asn	Leu	Ala	Glu	Met	Asn	Leu	Ile	Gly	Val	Pro	Val	Pro	Pro	Gly	Phe
		35					40					45			
Thr	Ile	Thr	Thr	Asp	Val	Cys	Thr	Glu	Tyr	Tyr	Glu	Met	Gly	Gln	Glu
	50					55					60				
Lys	Val	Val	Ser	Leu	Leu	Lys	Glu	Glu	Val	Glu	Lys	Ala	Ile	Ala	Asn
65				70					75					80	
Ile	Glu	Asn	Leu	Met	Arg	Ser	Lys	Phe	Gly	Asp	Val	Glu	Asn	Pro	Leu
				85					90					95	
Leu	Val	Ser	Val	Arg	Ser	Gly	Ala	Arg	Ala	Ser	Met	Pro	Gly	Met	Met
			100					105					110		
Asp	Thr	Ile	Leu	Asn	Leu	Gly	Leu	Asn	Asp	Glu	Val	Val	Glu	Gly	Leu
		115					120					125			
Thr	Arg	Lys	Thr	Gly	Asn	Ala	Arg	Phe	Ala	Trp	Asp	Ser	Tyr	Arg	Arg
	130					135					140				
Phe	Val	Gln	Met	Tyr	Gly	Asp	Val	Val	Leu	Gly	Met	Lys	Pro	Val	Asn
145					150					155					160
Lys	Glu	Asp	Gln	Asp	Pro	Phe	Glu	Ala	Ile	Ile	Glu	Glu	Val	Lys	His
				165					170					175	
Ala	Lys	Gly	Val	Lys	Leu	Asp	Asn	Glu	Leu	Glu	Val	Glu	Asp	Leu	Lys
			180					185					190		
Glu	Leu	Val	Lys	Lys	Phe	Lys	Ala	Ala	Val	Lys	Ala	Gln	Thr	Gly	Lys
		195					200					205			
Asp	Phe	Pro	Thr	Cys	Ala	Tyr	Glu	Gln	Leu	Trp	Gly	Ala	Ile	Cys	Ala
	210					215					220				
Val	Phe	Asn	Ser	Trp	Met	Asn	Glu	Arg	Ala	Ile	Leu	Tyr	Arg	Lys	Met
225					230					235					240
Glu	Gly	Ile	Pro	Asp	Glu	Trp	Gly	Thr	Ala	Val	Ser	Val	Gln	Ala	Met
				245					250					255	
Val	Phe	Gly	Asn	Met	Gly	Asp	Thr	Ser	Ala	Thr	Gly	Val	Cys	Phe	Ser
			260					265					270		
Arg	Asp	Ala	Ala	Thr	Gly	Glu	Asp	Leu	Phe	Asn	Gly	Glu	Tyr	Leu	Ile
		275					280					285			
Asn	Ala	Gln	Gly	Glu	Asp	Val	Val	Ala	Gly	Ile	Arg	Thr	Pro	Gln	Gln
	290					295					300				
Ile	Thr	Lys	Ile	Gly	Ser	Gln	Arg	Trp	Ala	Gln	Leu	Ala	Gly	Val	Ser
305					310					315					320
Glu	Glu	Glu	Arg	Ala	Ser	Lys	Tyr	Pro	Ser	Met	Glu	Glu	Ala	Met	Pro
				325					330					335	
Glu	Ile	Tyr	Lys	Gln	Leu	Asp	Glu	Leu	Gln	Thr	Lys	Leu	Glu	Asn	His
			340					345					350		
Tyr	Lys	Asp	Met	Gln	Asp										

Example 1	Example 2
Example 3	Example 4
Example 5	Example 6
Example 7	Example 8
Example 9	Example 10
Example 11	Example 12
Example 13	Example 14
Example 15	Example 16
Example 17	Example 18
Example 19	Example 20
Example 21	Example 22
Example 23	Example 24
Example 25	Example 26
Example 27	Example 28
Example 29	Example 30
Example 31	Example 32
Example 33	Example 34
Example 35	Example 36
Example 37	Example 38
Example 39	Example 40
Example 41	Example 42
Example 43	Example 44
Example 45	Example 46
Example 47	Example 48
Example 49	Example 50
Example 51	Example 52
Example 53	Example 54
Example 55	Example 56
Example 57	Example 58
Example 59	Example 60
Example 61	Example 62
Example 63	Example 64
Example 65	Example 66
Example 67	Example 68
Example 69	Example 70
Example 71	Example 72
Example 73	Example 74
Example 75	Example 76
Example 77	Example 78
Example 79	Example 80
Example 81	Example 82
Example 83	Example 84
Example 85	Example 86
Example 87	Example 88
Example 89	Example 90
Example 91	Example 92
Example 93	Example 94
Example 95	Example 96
Example 97	Example 98
Example 99	Example 100

900

905

<210> 5841
 <211> 472
 <212> PRT
 <213> B.fragilis

<400> 5841

Ile	Ile	Ile	Met	Lys	Gln	Ser	Lys	Ile	Ile	Val	Ala	Gly	Ile	Gly	Pro
1				5					10					15	
Gly	Ser	Glu	Gln	Asp	Ile	Thr	Pro	Ala	Val	Leu	Ala	Ala	Val	Arg	Glu
			20					25					30		
Ala	Asp	Val	Val	Val	Gly	Tyr	Lys	Tyr	Tyr	Phe	Arg	Phe	Ile	Arg	Asp
		35					40					45			
Phe	Val	Arg	Pro	Asp	Ala	Glu	Cys	Ile	Asp	Thr	Gly	Met	Lys	Arg	Glu
		50				55					60				
Arg	Ala	Arg	Ala	Glu	Gln	Ala	Phe	Glu	Tyr	Ala	Glu	Gln	Gly	Lys	Thr
65					70					75					80
Val	Cys	Val	Ile	Ser	Ser	Gly	Asp	Ala	Gly	Ile	Tyr	Gly	Met	Thr	Pro
			85						90					95	
Leu	Ile	Tyr	Glu	Met	Lys	Arg	Glu	Arg	Gln	Ser	Asn	Val	Glu	Ile	Ile
			100					105					110		
Ala	Leu	Pro	Gly	Ile	Ser	Ala	Phe	Gln	Lys	Ala	Ala	Ser	Leu	Leu	Gly
		115					120					125			
Ala	Pro	Ile	Gly	His	Asp	Phe	Cys	Val	Ile	Ser	Leu	Ser	Asp	Leu	Met
		130				135					140				
Thr	Pro	Trp	Glu	Arg	Ile	Glu	Arg	Arg	Ile	Leu	Ala	Ala	Ala	Gln	Ala
145					150					155					160
Asp	Phe	Val	Thr	Ala	Val	Tyr	Asn	Pro	Lys	Ser	Asp	Gly	Arg	Tyr	Trp
			165					170						175	
Gln	Ile	Tyr	Arg	Leu	Arg	Glu	Ile	Phe	Leu	Arg	Glu	Gly	Arg	Ser	Pro
			180					185					190		
Glu	Thr	Pro	Val	Gly	Tyr	Val	Arg	Gln	Ala	Gly	Arg	Glu	Glu	Gln	Glu
		195					200					205			
Ile	His	Ile	Thr	Thr	Leu	Ala	Ala	Phe	Asp	Pro	Glu	Thr	Val	Asp	Met
	210				215					220					
Phe	Thr	Val	Val	Leu	Ile	Gly	Asn	Ser	Gln	Thr	Tyr	Thr	Phe	Asn	Gln
225					230					235					240
Asn	Ile	Ile	Thr	Pro	Arg	Gly	Tyr	Tyr	Arg	Glu	Thr	Arg	Ser	Glu	Ala
			245						250					255	
Thr	Gly	Ile	Gly	Gln	Asp	Ile	Met	Ile	Arg	Ser	Phe	Arg	Thr	Ile	Glu
		260					265						270		
Thr	Glu	Leu	Lys	Asn	Arg	Asp	Ile	Pro	Leu	Asp	Arg	Lys	Trp	Ala	Leu
		275					280					285			
Leu	His	Ala	Ile	His	Thr	Thr	Ala	Asp	Phe	Glu	Met	Glu	Arg	Leu	Leu
	290					295					300				
Tyr	Thr	Asp	Pro	Asn	Ala	Val	Ala	Ser	Leu	Tyr	Asp	Ala	Ile	Arg	Thr
305					310					315					320
Gly	Asn	Leu	Arg	Thr	Ile	Val	Thr	Asp	Val	Thr	Met	Ala	Ala	Ser	Gly
			325						330					335	
Ile	Arg	Lys	Gly	Ala	Leu	Gln	Arg	Leu	Gly	Val	Glu	Val	Lys	Cys	Tyr
		340						345					350		
Leu	Asn	Asp	Glu	Arg	Val	Ala	Glu	Met	Ala	Thr	Ser	Lys	Gly	Ile	Thr
		355					360					365			
Arg	Thr	Gln	Ala	Gly	Ile	Arg	Leu	Ala	Val	Glu	Glu	His	Pro	Asp	Ala
		370				375					380				
Leu	Phe	Val	Phe	Gly	Asn	Ala	Pro	Thr	Ala	Leu	Met	Glu	Leu	Cys	Asp
385					390					395					400
Leu	Ile	Arg	Lys	Glu	Lys	Ala	Gln	Pro	Ala	Gly	Ile	Val	Ala	Ala	Pro

405 410 415
 Val Gly Phe Val His Val Glu Glu Ser Lys His Met Thr Lys Pro Phe
 420 425 430
 Thr Arg Ile Pro Lys Leu Ile Val Glu Gly Arg Lys Gly Gly Ser Asn
 435 440 445
 Leu Ala Ala Thr Leu Val Asn Ala Ile Leu Cys Tyr Pro Asp Ala Glu
 450 455 460
 Gln Leu Arg Pro Gly Arg Asp Val
 465 470

<210> 5842
 <211> 196
 <212> PRT
 <213> B.fragilis

<400> 5842
 Ser Arg Ile Phe Ile Pro Met Asn Ile Ile Lys Thr Ser Ile Glu Gly
 1 5 10 15
 Leu Val Ile Leu Glu Pro Arg Leu Phe Gln Asp Asp Arg Gly Tyr Phe
 20 25 30
 Phe Glu Ser Phe Asn Gln Gly Glu Phe Glu Ser Asn Val Cys Gln Thr
 35 40 45
 Thr Phe Val Gln Asp Asn Glu Ser Lys Ser Ser Tyr Gly Val Ile Arg
 50 55 60
 Gly Leu His Phe Gln Lys Pro Pro Phe Ala Gln Ser Lys Leu Val Arg
 65 70 75 80
 Val Ile Lys Gly Ala Val Leu Asp Val Ala Val Asp Ile Arg Lys Gly
 85 90 95
 Ser Pro Thr Phe Gly Lys His Val Ser Val Glu Leu Thr Glu Asp Asn
 100 105 110
 His Arg Gln Phe Phe Ile Pro Arg Gly Phe Ala His Gly Phe Ser Val
 115 120 125
 Leu Ser Glu Glu Val Ile Phe Gln Tyr Lys Cys Asp Asn Phe Tyr His
 130 135 140
 Pro Glu Ala Glu Gly Ala Ile Ala Trp Asn Asp Pro Asp Leu Asn Ile
 145 150 155 160
 Asp Trp Lys Ile Pro Gln Asp Arg Val Ile Leu Ser Gly Lys Asp Tyr
 165 170 175
 Thr His Pro Leu Leu His Asn Ile Glu Leu Gln Phe Asp Ile Asn Asn
 180 185 190
 Thr Leu Tyr Glu
 195

<210> 5843
 <211> 140
 <212> PRT
 <213> B.fragilis

<400> 5843
 Ser Met Ile Phe Met Ala Thr Thr Phe Asp Ile Gln Leu Pro His Tyr
 1 5 10 15
 Pro Arg Gly Phe His Leu Ile Thr Arg Asp Ile Leu Ser Leu Leu Pro
 20 25 30
 Asp Leu Pro Glu Asn Gly Leu Leu Val Val Phe Ile Lys His Thr Ser
 35 40 45
 Ala Gly Ile Thr Ile Asn Glu Asn Ala Asp Pro Asp Val Arg His Asp
 50 55 60
 Phe Asn Thr Phe Phe Asn Lys Leu Val Pro Asp Gly Ala Pro Tyr Phe
 65 70 75 80

Val His Thr Leu Glu Gly Pro Asp Asp Met Ser Ala His Ile Lys Ala
 85 90 95
 Ser Leu Ile Gly Thr Ser Val Ser Ile Pro Ile Arg Asn His Arg Leu
 100 105 110
 Asn Leu Gly Thr Trp Gln Gly Ile Tyr Leu Cys Glu Phe Arg Asp Gly
 115 120 125
 Gly Asp Lys Arg Lys Leu Ser Ile Thr Ile Leu Glu
 130 135 140

<210> 5844
 <211> 156
 <212> PRT
 <213> B.fragilis

<400> 5844
 Pro Gly Gly Met Leu Arg Tyr Ser Gly Val Pro Lys Glu His Pro Asp
 1 5 10 15
 Val Asn Asp Met Thr Thr Ser Ala Ser Ile Glu Ser Ser Met Glu Arg
 20 25 30
 Ser Gln Ser Ile Leu Ser Ser Ser Ala Leu Asn Trp Tyr Ala Leu Arg
 35 40 45
 Ile Thr Tyr Gly Arg Glu Leu Ala Leu Gln Glu Tyr Leu Asn Ser Glu
 50 55 60
 Gly Ile Glu Asn Phe Ile Pro Met His Tyr Glu Tyr Thr Ile Lys Asn
 65 70 75 80
 Glu Arg Arg Val Arg Lys Leu Val Pro Ala Val His Asn Leu Val Phe
 85 90 95
 Val Arg Ser Ser Arg Ser Cys Ile Asp Ala Ile Lys Glu Ser Arg Ser
 100 105 110
 Ala Thr Leu Pro Ile Arg Tyr Ile Met Asp Arg Glu Tyr His Arg Pro
 115 120 125
 Ile Ile Val Pro Asp Ser Gln Met Arg Asn Phe Met Ala Val Ser Ala
 130 135 140
 Asn Tyr Asp Glu Ser Leu Leu Tyr Phe Glu Pro Phe
 145 150 155

<210> 5845
 <211> 436
 <212> PRT
 <213> B.fragilis

<400> 5845
 Ser Leu Ile Ile Asn His Met Ser Val Lys Gly Phe Phe Phe Ile Leu
 1 5 10 15
 Val Phe Phe Leu Val Ala Ile Met Gly Phe Leu Ile Tyr Ile Ser Glu
 20 25 30
 Thr Val Val Val Lys Tyr Leu Tyr Ile Ala Glu Ala Leu Met Leu Leu
 35 40 45
 Leu Met Leu Tyr Leu Ile Leu Phe Tyr Arg Lys Ile Val Lys Pro Met
 50 55 60
 Asn Thr Ile Gly Ser Gly Met Glu Leu Leu Arg Glu Gln Asp Phe Ser
 65 70 75 80
 Ser Arg Leu Ser His Val Gly Gln Gln Glu Ala Asp Arg Val Val Asn
 85 90 95
 Val Phe Asn Arg Met Met Glu Gln Leu Lys Asn Glu Arg Leu Arg Leu
 100 105 110
 Arg Glu Gln Asn His Phe Leu Asp Leu Met Ile Asn Ala Ser Pro Met
 115 120 125
 Gly Val Ile Ile Met Thr Leu Asp Glu Glu Val Ser Gln Leu Asn Pro

130 135 140
 Met Ala Met Lys Met Met Gly Val Arg Pro Glu Glu Ala Glu Gly Arg
 145 150 155 160
 Lys Leu Ser Glu Ile Asp Ser Pro Leu Ala Leu Glu Leu Ala Ala Ile
 165 170 175
 Pro Asn Gly Ala Thr Ser Thr Val Arg Leu Asn Asp Ser Ser Ile Tyr
 180 185 190
 Lys Cys Thr His Ser Ser Phe Val Asp Arg Gly Phe Gln His Pro Phe
 195 200 205
 Tyr Leu Met Glu Gly Leu Thr Asp Glu Val Met Lys Ala Glu Lys Lys
 210 215 220
 Ala Tyr Glu Lys Val Ile Arg Met Ile Ala His Glu Val Asn Asn Thr
 225 230 235 240
 Thr Ala Gly Ile Thr Ser Thr Leu Asp Thr Val Glu Gln Ala Leu Tyr
 245 250 255
 Glu Ser Glu Gly Met Glu Asp Ile Cys Asp Val Met Arg Val Cys Thr
 260 265 270
 Glu Arg Cys Phe Ser Met Ser His Phe Ile Thr Arg Phe Ala Asp Val
 275 280 285
 Val Lys Ile Pro Glu Pro Arg Phe Thr Pro Thr Asn Leu Asn Asp Leu
 290 295 300
 Ala Phe Thr Cys Lys Arg Phe Met Glu Gly Met Cys Asn Asp Arg Asn
 305 310 315 320
 Ile Arg Leu Gln Leu Ile Cys Asp Glu Ser Leu Asp Asp Val Lys Leu
 325 330 335
 Asp Ala Ser Leu Phe Glu Gln Val Leu Val Asn Ile Ile Lys Asn Ala
 340 345 350
 Ala Glu Ser Ile Gly Gln Asp Gly Gln Ile Ile Ile Arg Thr Ser Leu
 355 360 365
 Pro Thr Ala Ile Glu Val Val Asp Asn Gly Pro Gly Ile Ser Lys Glu
 370 375 380
 Thr Glu Ala Lys Leu Phe Ser Pro Phe Phe Ser Thr Lys Pro Asn Gly
 385 390 395 400
 Gln Gly Ile Gly Leu Ile Phe Ile Arg Glu Val Leu Ser Arg His Gly
 405 410 415
 Cys Thr Phe Ser Leu Arg Thr Tyr Ala Asp Gly Leu Thr Arg Phe Arg
 420 425 430
 Ile Leu Phe Pro
 435

<210> 5846

<211> 96

<212> PRT

<213> B.fragilis

<400> 5846

Val Tyr Leu Ile Lys Thr Thr Lys Lys Met Lys Lys Ile Val Leu Phe
 1 5 10 15
 Leu Phe Val Ala Ile Ala Thr Leu Ser Val Lys Ala Gln Asp Leu Tyr
 20 25 30
 Met Gly Gly Thr Val Gly Leu Trp Arg Asn Asp Asp Ala Asn Thr Thr
 35 40 45
 Ser Phe Lys Leu Ala Pro Glu Ile Gly Tyr Asn Leu Ser Glu Gln Trp
 50 55 60
 Ala Leu Gly Val Glu Leu Gln Phe Asn His Glu Ile Gln Gly Ala Tyr
 65 70 75 80
 Leu Asp Lys His Ile Cys His Cys Ser Leu Arg Thr Phe Phe Leu Leu
 85 90 95

<210> 5847
 <211> 153
 <212> PRT
 <213> B.fragilis

<400> 5847

Asn Ile Lys Met Met Glu Asn Tyr Lys Gln Asn Tyr Ile His Lys Pro
 1 5 10 15
 Tyr Leu Phe Leu Ala Ile Leu Phe Ser Leu Leu Ser Cys Gln Lys Glu
 20 25 30
 Val Val Ser Lys Val Thr Phe Glu Arg Lys Leu Ser Gly Ile Lys Pro
 35 40 45
 Glu Thr Glu Phe Arg Leu Asp Ser Leu Arg Asn Asp Lys Trp Gln Lys
 50 55 60
 Cys Tyr Ile Ile Pro Pro Tyr Gln Gln Tyr Asn Ser Ala Leu Asn Arg
 65 70 75 80
 Ile Lys Leu Arg Lys His Asp Leu Asn Lys Ile Lys Glu Asn Ala Ile
 85 90 95
 Ser Asp Gly Ile Asn Thr Phe Val Phe Ile Asn Asn Asp Gly Ser Ile
 100 105 110
 Ser Ile Glu Thr Val Ser Arg Ser Ile Ile Asp Ile Gln Asp Thr Leu
 115 120 125
 Ser Asp Ser Ile Phe Leu Phe Tyr Pro Thr Thr Ile Met Lys Met Asp
 130 135 140
 Ser Lys Arg Lys Ile Ile Asp Ile Lys
 145 150

<210> 5848
 <211> 395
 <212> PRT
 <213> B.fragilis

<400> 5848

Thr Ile Lys Met Arg Lys Val Leu Ser Phe Ser Ala Phe Leu Ile Ile
 1 5 10 15
 Gly Leu Leu Leu Ser Gln Tyr Leu Pro Leu Leu Ala Gly Glu Gly Tyr
 20 25 30
 Ala Thr Val Lys Ile Val Ser Asn Ile Leu Leu Tyr Ile Cys Leu Ser
 35 40 45
 Phe Ile Met Ile Asn Val Gly Arg Glu Phe Glu Val Asp Lys Thr Arg
 50 55 60
 Trp Arg Ser Tyr Ala Gly Asp Tyr Phe Ile Ala Met Ala Thr Ala Ala
 65 70 75 80
 Met Pro Trp Phe Leu Ile Ala Ile Tyr Tyr Val Phe Val Leu Leu Pro
 85 90 95
 Pro Glu Phe Trp Asn Ser Trp Glu Ala Trp Lys Glu Asn Leu Leu Leu
 100 105 110
 Ser Arg Phe Ala Ala Pro Thr Ser Ala Gly Ile Leu Phe Thr Met Leu
 115 120 125
 Ala Ala Ile Gly Leu Lys Ser Ser Trp Ile Tyr Lys Lys Ile Gln Val
 130 135 140
 Leu Ala Ile Phe Asp Asp Leu Asp Thr Ile Leu Leu Met Ile Pro Leu
 145 150 155 160
 Gln Ile Met Met Ile Gly Leu Arg Trp Gln Leu Ile Val Val Val Phe
 165 170 175
 Ile Val Phe Leu Leu Leu Ser Leu Gly Trp Lys Gln Leu Gly Arg Tyr
 180 185 190
 Asn Trp Arg Gln Asp Trp Lys Ala Ile Met Gly Tyr Ser Val Leu Val
 195 200 205

Phe Val Ala Thr Gln Ala Val Tyr Tyr Phe Ser Lys Gln Leu Tyr Gly
 210 215 220
 Glu Glu Gly Ser Ile His Ile Glu Val Leu Leu Pro Ala Phe Val Leu
 225 230 235 240
 Gly Met Ile Met Lys His Lys Glu Ile Asp Thr Pro Val Glu His Lys
 245 250 255
 Val Ser Thr Gly Val Ser Phe Leu Phe Met Phe Leu Val Gly Met Ser
 260 265 270
 Met Pro His Phe Ile Gly Val Asn Phe Ala Glu Thr His Ala Gly Thr
 275 280 285
 His Ser Val Thr Gly Ser Gln Glu Met Met Ser Trp Gly Met Ile Ala
 290 295 300
 Leu His Val Leu Ile Val Ser Leu Leu Ser Asn Ile Gly Lys Leu Phe
 305 310 315 320
 Pro Val Phe Phe Tyr Arg Asp Arg Lys Phe Ser Glu Arg Leu Ala Leu
 325 330 335
 Ser Ile Gly Met Phe Thr Arg Gly Glu Val Gly Ala Gly Val Ile Phe
 340 345 350
 Ile Ala Leu Gly Tyr Asn Leu Gly Gly Pro Ala Leu Val Ile Ser Val
 355 360 365
 Leu Thr Ile Val Leu Asn Leu Ile Leu Thr Gly Ile Phe Val Leu Trp
 370 375 380
 Val Lys Lys Leu Ala Leu Arg Ser Tyr Thr Thr
 385 390 395

<210> 5849
 <211> 311
 <212> PRT
 <213> B.fragilis

<400> 5849
 Ser Lys Lys Ile Asn Met Ala Thr Ile Tyr Asp Gly Ile Asn Tyr Phe
 1 5 10 15
 Pro Val Gly Val Asn Phe Met Glu Glu Asn Ala Met Glu Val Ile Glu
 20 25 30
 Ala Lys Tyr Gly Ile Lys Gly Ser Ala Ile Val Leu Lys Leu Cys
 35 40 45
 Lys Ile Tyr Lys Glu Gly Tyr Phe Ile Arg Trp Asp Glu Glu Gln Cys
 50 55 60
 Leu Ile Phe Ala Asn Lys Ala Gly Arg Glu Val Gln Ala Ala Glu Val
 65 70 75 80
 Gln Gly Ile Ile Glu Ile Leu Phe Ile Lys Gly Ile Met Asp Lys Asn
 85 90 95
 Ser Tyr Leu Glu Asn Gly Ile Leu Thr Ser Glu Asn Ile Gln Lys Val
 100 105 110
 Trp Met Glu Ala Thr Lys Arg Arg Lys Arg Glu Leu Ser Glu Leu Pro
 115 120 125
 Tyr Leu Met Val Lys Thr Glu Lys Glu Lys Glu Asn Asp Lys Pro Glu
 130 135 140
 Lys Glu Ser Asp Lys Pro Asp Asn Ala Ser Thr Gln Gln Glu Ile Glu
 145 150 155 160
 Arg Pro Lys Pro Leu Lys Glu Gly Lys Val Ala Gly Ser Thr Gly Asp
 165 170 175
 Val Ala Val Ser Pro Gly Asn Val Val His Asp Val Ala Val Asn Ala
 180 185 190
 Lys Asn Ala Cys Asn Ser Gly Gln Ser Lys Val Lys Lys Ser Arg Ala
 195 200 205
 Lys Glu Asn Lys Glu Leu Pro Pro Ser Val Pro Pro Glu Gly Lys Glu
 210 215 220

Glu Glu Arg Lys Glu Asp Ser Val Ser Leu Pro Ile Pro Gly Tyr Ala
 225 230 235 240
 Phe Asn Thr Met Thr His Asn Tyr Pro Gly Leu Thr Asp Thr Leu Gln
 245 250 255
 Arg Leu Gly Ile Asn Glu Val Ser Glu Val Asn Ala Ile Leu Arg Leu
 260 265 270
 Ser Asp Tyr Gly Arg Lys Gly Thr Thr Val Trp Arg Leu Ile Ala Asn
 275 280 285
 Thr Cys Trp Ser Asp Ile Gly Ala Lys Gly Arg Tyr Leu Ile Ala Ala
 290 295 300
 Leu Asn Arg Ala Lys Arg Lys
 305 310

<210> 5850
 <211> 266
 <212> PRT
 <213> B.fragilis

<400> 5850

Tyr Met Lys Ile Ser Val Ile Ile Pro Cys Phe Asn Gln Gly Lys Tyr
 1 5 10 15
 Leu Ala Glu Ala Leu Asp Ser Val Val Met Gln Thr Phe Ser Asp Trp
 20 25 30
 Glu Cys Ile Ile Ile Asn Asp Gly Ser Ile Asp Asn Ser Glu Asn Val
 35 40 45
 Ala Leu Ser Tyr Val Glu Lys Asp Pro Arg Phe His Tyr Ile Cys Gln
 50 55 60
 Lys Asn Gln Gly Val Cys Ile Ala Arg Asn Arg Gly Ile Ala Met Ala
 65 70 75 80
 Gln Gly Glu Tyr Ile Leu Cys Leu Asp Gly Asp Asp Lys Ile Ser Arg
 85 90 95
 Asn Phe Leu Glu Cys Met Tyr Pro Ile Leu Asp Glu Glu Gln Ser Val
 100 105 110
 Lys Val Val Thr Ser Thr Val Val Gln Phe Gly Lys Ile His Arg Val
 115 120 125
 Ile Pro Ser Thr Asp Tyr Ser Leu Glu Lys Leu Met Gly Arg Asn Leu
 130 135 140
 Phe Val Ile Thr Ser Met Phe Arg Lys Val Asp Phe Glu Lys Thr Glu
 145 150 155 160
 Gly Phe Asn Glu Asn Met Ala Lys Gly Leu Glu Asp Trp Asp Phe Trp
 165 170 175
 Leu Ser Met Leu Glu Ser Gly Gly Glu Val Val Cys Ala Lys Gln Ala
 180 185 190
 Ile Phe Tyr Tyr Arg Ile Arg Gly Tyr Ser Arg Asn Lys Ser Ile Ser
 195 200 205
 Glu Asp Tyr Tyr Ser Leu Leu Arg Lys Thr Ile Tyr Glu Asn His Lys
 210 215 220
 His Leu Phe Ser Thr Ile Phe Phe Asn Pro Lys Tyr Ser Phe Glu Tyr
 225 230 235 240
 Tyr Leu Ile Ala Lys Ser Tyr Glu Tyr Lys Leu Gly Lys Leu Leu Phe
 245 250 255
 Arg Pro Ile Arg Phe Leu Tyr Asp Leu Phe
 260 265

<210> 5851
 <211> 254
 <212> PRT
 <213> B.fragilis

<400> 5851

Lys Met Lys Ile Ile Thr Tyr Asn Val Asn Gly Leu Arg Ala Ala Val
 1 5 10 15
 Asn Lys Gly Leu Pro Glu Trp Leu Ala Glu Glu Asn Pro Asp Val Leu
 20 25 30
 Cys Leu Gln Glu Thr Lys Leu Gln Pro Glu Gln Tyr Pro Ala Glu Ala
 35 40 45
 Phe Glu Ala Leu Gly Tyr Lys Ala Tyr Leu Tyr Ser Ala Gln Lys Lys
 50 55 60
 Gly Tyr Ser Gly Val Ala Ile Leu Thr Lys Val Glu Pro Asp His Ile
 65 70 75 80
 Glu Tyr Gly Met Gly Ile Glu Glu Tyr Asp Asn Glu Gly Arg Phe Ile
 85 90 95
 Arg Ala Asp Phe Gly Asp Leu Ser Val Val Ser Val Tyr His Pro Ser
 100 105 110
 Gly Thr Ser Gly Asp Glu Arg Gln Ala Phe Lys Met Val Trp Leu Glu
 115 120 125
 Ala Phe Gln Lys Tyr Val Thr Glu Leu Arg Lys Ser Arg Pro Asn Leu
 130 135 140
 Ile Leu Cys Gly Asp Tyr Asn Ile Cys His Glu Pro Ile Asp Ile His
 145 150 155 160
 Asp Pro Val Arg Asn Ala Thr Asn Ser Gly Phe Leu Pro Glu Glu Arg
 165 170 175
 Glu Trp Met Thr Arg Phe Leu Ser Ala Gly Phe Ile Asp Ser Phe Arg
 180 185 190
 Thr Leu Tyr Pro Gln Lys Gln Glu Tyr Thr Trp Trp Ser Tyr Arg Phe
 195 200 205
 Asn Ser Arg Ala Lys Asn Lys Gly Trp Arg Ile Asp Tyr Cys Met Val
 210 215 220
 Ser Glu Pro Val Arg Ser Leu Leu Lys Glu Ala Val Ile Leu Asn Asn
 225 230 235 240
 Ala Val His Ser Asp His Cys Pro Met Ala Leu Glu Ile Gly
 245 250

<210> 5852

<211> 193

<212> PRT

<213> B.fragilis

<400> 5852

Asn Tyr Arg Ile Met Lys Arg Asn Leu Val Phe Val Leu Phe Ala Leu
 1 5 10 15
 Val Ser Val Val Gly Phe Ser Gln Val Ser Trp Asn Ala Lys Val Gly
 20 25 30
 Met Asn Ile Ser Asn Phe Thr Gly Asp Phe Asp Met Asn Ala Lys Val
 35 40 45
 Gly Phe Lys Ile Gly Gly Gly Met Glu Tyr Gly Phe Asn Glu Ile Trp
 50 55 60
 Ser Leu Gln Pro Ser Leu Phe Val Ser Ser Lys Gly Ala Lys Lys Asp
 65 70 75 80
 Glu Leu Ser Val Asn Ala Val Tyr Leu Glu Leu Pro Val Met Ala Ala
 85 90 95
 Ala Arg Phe Lys Val Ala Asp Asn Thr Asn Ile Val Leu Ser Ala Gly
 100 105 110
 Pro Tyr Phe Ala Cys Gly Ile Ala Gly Asn Ser Lys Val Asp Leu Gly
 115 120 125
 Lys Gly Arg Leu Glu Val Asp Thr Phe Gly Asp Asp Gly Leu Leu Lys
 130 135 140
 Arg Gly Asp Val Gly Leu Gly Ile Gly Val Ala Ala Glu Phe Gly Lys

145 150 155 160
 Ile Ile Ala Gly Leu Asp Gly Gln Phe Gly Phe Val Asp Val Met Asp
 165 170 175
 Asn Val Asn Gly Lys Asn Leu Asn Leu Ser Ile Ser Val Gly Tyr Lys
 180 185 190
 Phe

<210> 5853
 <211> 956
 <212> PRT
 <213> B.fragilis

<400> 5853

Thr Asp Thr Phe Val Val Leu Phe Tyr Phe Phe Cys Arg Ser Leu Tyr
 1 5 10 15
 Val Val Arg Arg His His Val Thr Val Asp Gly Thr Asp Asp Leu Gly
 20 25 30
 Arg Tyr Leu Val Pro Gly Pro Ser Val Tyr Glu Asn Pro Ala Gly Arg
 35 40 45
 Gly Ile Ala Arg Arg Ile Lys Ala Tyr Arg Asn Ile Leu Ser Ser Ile
 50 55 60
 Cys Val Val Phe Lys Ile Ile Thr Tyr Ile Cys Val His Asn Pro Asp
 65 70 75 80
 Thr Thr Gln Ile Phe Ala Met Asn Lys Arg Leu Tyr Thr Ile Phe Leu
 85 90 95
 Ile Ser Val Phe Leu Leu Leu Pro Gly Phe Ser Thr Ala Ala Glu Arg
 100 105 110
 Ile Tyr Asn Val Leu Phe Val Gln Ser Tyr Ala Pro Glu Thr Pro Trp
 115 120 125
 His Asn Asp Leu Val Arg Gly Leu Lys Asp Gly Phe Gly Glu Ser Gly
 130 135 140
 Leu Lys Val Asn Ile Thr Thr Glu Phe Leu Asp Ala Asn Phe Trp Thr
 145 150 155 160
 Tyr Gln Ser Glu Lys Leu Ile Met Arg Arg Phe Cys Glu Arg Ala Arg
 165 170 175
 Glu Arg Gly Thr Asp Leu Ile Val Thr Val Ser Asp Glu Ala Phe His
 180 185 190
 Thr Leu Leu Thr Cys Gly Asp Ser Leu Ala Leu Gln Leu Pro Val Val
 195 200 205
 Phe Phe Asn Ile Lys Tyr Pro Glu Gly Ser Leu Ile Asp Ser Leu Pro
 210 215 220
 Asn Val Cys Gly Tyr Thr Ala Asn Pro Asp Phe Gly Glu Leu Leu Arg
 225 230 235 240
 Gln Ala Ser Arg Leu Phe Pro Thr Arg Thr Glu Val Val Cys Ile Ser
 245 250 255
 Asp Asn Ser Leu Leu Ser Ser Lys Gly Lys Asp Asp Phe Met Asn Glu
 260 265 270
 Trp Glu Gly Phe Val Glu Glu His Pro Glu Tyr Thr Val Thr Phe Tyr
 275 280 285
 Asn Ser Gln Thr Asp Thr Thr Asn Lys Ile Ile Ala Ser Thr Cys Tyr
 290 295 300
 Pro Arg Asn Thr His Lys Thr Leu Ile Ile Ala Pro Lys Trp Ser Ser
 305 310 315 320
 Phe Met Ser Phe Ile Gly Arg Asn Ser Lys Ala Pro Phe Phe Ser Cys
 325 330 335
 Glu Asn Leu Ala Leu Thr Asn Gly Ala Phe Gly Ala Tyr Asp Ala Asp
 340 345 350
 Ser Tyr Ala Ser Ala His Glu Val Gly Arg Thr Ala Ala Asp Val Leu

355	360	365
Arg Gly Lys Ser Pro Ser Glu Val Gly Ile Ile Glu Ser Pro Leu Lys		
370	375	380
Phe Met Tyr Asp Phe Lys Gln Leu Val Phe Phe Lys Val Asp Pro Lys		
385	390	395
Gln Ala Ser Ala Ile Gly Gly Thr Ile Ile Asn Glu Pro Tyr Met Glu		400
	405	410
Lys Tyr Arg Met Leu Tyr Ile Leu Leu Tyr Ser Ser Ile Leu Ala Leu		415
	420	425
Leu Val Phe Leu Ile Val Trp Leu Tyr Arg Ile Asn Arg Arg Glu Ser		430
	435	440
Arg Arg Arg Ile His Ala Gln Thr Arg Leu Leu Ile Gln Asn Arg Leu		445
	450	455
Val Ala Gln Cys Asp Glu Phe Asp Asn Val Phe His Ser Ile Arg Asp		460
465	470	475
Gly Val Ile Thr Tyr Asp Thr Asp Phe Arg Ile His Phe Thr Asn Arg		480
	485	490
Ser Leu Leu Lys Met Leu His Leu Pro Lys Asp Glu Ala Ala Arg Pro		495
	500	505
Tyr Glu Gly Leu Pro Ala Gly Ser Ile Phe Lys Ile Tyr Asn Asn Gly		510
	515	520
Lys Glu Ile Leu Arg Pro Met Leu Lys Gln Val Val Thr Glu Glu Ser		525
	530	535
Ser Val Val Ile Pro Glu Asn Ser Phe Met Gln Glu Val His Ser Gly		540
545	550	555
Ser Tyr Phe Pro Val Ser Gly Glu Val Val Pro Ile Arg Ala His Gly		560
	565	570
Lys Ile Thr Gly Met Ala Leu Ser Ala Arg Asn Ile Ser Asp Glu Glu		575
	580	585
Met Gln Lys Arg Phe Phe Arg Met Ala Val Asp Glu Ser Ser Ile Tyr		590
	595	600
Pro Trp Gln Tyr Asn Ile Arg Thr Gly Leu Phe Thr Phe Pro Ala Gly		605
	610	615
Phe Leu Thr Arg Phe Gly Phe Ala Glu Asn Lys Thr Thr Ile Ser Arg		620
625	630	635
Asp Glu Met Asp Arg Met Val His Pro Asp Asp Gln Glu Ser Ala Tyr		640
	645	650
Glu Val Phe Asn Arg Ala Leu Ala Gly Leu Ser Gln Ser Thr Arg Met		655
	660	665
Ser Phe Arg Gln Leu Ser Gly Asp Gly Asn Tyr Glu Trp Trp Glu Tyr		670
	675	680
Arg Thr Ser Val Leu Ser Gly Leu Thr Thr Asp Thr Pro Tyr Ser Ile		685
	690	695
Leu Gly Val Cys Gln Ser Ile Gln Arg Tyr Lys Thr Thr Glu Glu Glu		700
705	710	715
Leu Thr Ala Ala Arg Asp Lys Ala Leu Gln Ala Asp Lys Leu Lys Ser		720
	725	730
Ala Phe Leu Ala Asn Met Ser His Glu Ile Arg Thr Pro Leu Asn Ala		735
	740	745
Ile Val Gly Phe Ser Asp Leu Leu Ser Asp Thr Ser Gly Phe Thr Glu		750
	755	760
Glu Glu Val Lys Leu Phe Ile Glu Thr Ile Asn Lys Asn Cys Gly Leu		765
	770	775
Leu Leu Ala Leu Ile Asn Asp Ile Leu Asp Leu Ser Arg Ile Glu Ser		780
785	790	795
Gly Thr Met Asp Phe Gln Phe Ala Gly His Asn Leu Pro Leu Leu Met		800
	805	810
Lys Asn Val Tyr Asp Ser Gln Arg Leu Asn Met Pro Pro Gly Val Gln		815
	820	825
		830

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Leu Val Leu Lys Leu Pro Glu Asn Ser Lys Lys Tyr Leu Val Thr Asp
 835 840 845
 Asn Val Arg Leu Gln Gln Val Val Asn Asn Leu Ile Asn Asn Ala Val
 850 855 860
 Lys Phe Thr Thr Gln Gly Ser Ile Thr Phe Gly Tyr Thr Glu Glu Glu
 865 870 875 880
 Pro Gly Tyr Thr Ser Leu Phe Val Glu Asp Thr Gly Lys Gly Ile Ser
 885 890 895
 Glu Asp Gly Leu Arg His Ile Phe Glu Arg Phe Tyr Lys Val Asp Ser
 900 905 910
 Phe Thr Gln Gly Ala Gly Leu Gly Leu Ser Ile Cys Gln Thr Ile Val
 915 920 925
 Gly Arg Leu Asn Gly Thr Ile Thr Val Ala Ser Glu Glu Gly His Gly
 930 935 940
 Thr Arg Phe Thr Val Arg Leu Pro Asp Ile Cys Glu
 945 950 955

<210> 5854

<211> 381

<212> PRT

<213> B.fragilis

<400> 5854

Leu Thr Met Ile Asp Phe Thr Gln Phe Pro Ser Pro Cys Tyr Ile Met
 1 5 10 15
 Glu Glu Glu Leu Leu Arg Lys Asn Leu Ser Leu Ile Lys Ser Val Ala
 20 25 30
 Asp Asp Ala Gly Val Glu Ile Ile Leu Ala Phe Lys Ser Phe Ala Met
 35 40 45
 Trp Arg Ser Phe Pro Ile Phe Arg Glu Tyr Ile Gly His Ser Thr Ala
 50 55 60
 Ser Ser Val Tyr Glu Ala Arg Leu Ala Leu Glu Glu Phe Gly Ser Lys
 65 70 75 80
 Ala His Thr Tyr Ser Pro Ala Tyr Thr Glu Ala Asp Phe Pro Glu Ile
 85 90 95
 Met Arg Cys Ser Ser His Ile Thr Phe Asn Ser Leu Ser Gln Phe Ser
 100 105 110
 Arg Phe Tyr Pro Leu Thr Val Ala Glu Gly Ser Gly Ile Ser Cys Gly
 115 120 125
 Ile Arg Val Asn Pro Glu Tyr Ser Glu Val Glu Thr Glu Leu Tyr Asn
 130 135 140
 Pro Cys Ala Pro Gly Thr Arg Phe Gly Ile Thr Ala Asp Leu Leu Pro
 145 150 155 160
 Ala Arg Leu Pro Gln Gly Ile Glu Gly Phe His Cys His Cys His Cys
 165 170 175
 Glu Ser Ser Ser Phe Glu Leu Glu Arg Thr Leu Gln His Leu Glu Glu
 180 185 190
 Lys Phe Ser Pro Trp Phe Ser Gln Ile Lys Trp Leu Asn Leu Gly Gly
 195 200 205
 Gly His Leu Met Thr Arg Lys Asp Tyr Asp Thr Arg His Leu Thr Gly
 210 215 220
 Leu Leu Gln Gly Leu Lys Lys Arg Tyr Pro His Leu Arg Ile Ile Leu
 225 230 235 240
 Glu Pro Gly Ser Ala Phe Thr Trp Gln Thr Gly Val Leu Thr Ser Glu
 245 250 255
 Val Val Asp Ile Val Glu Ser Arg Gly Ile Arg Thr Ala Ile Leu Asn
 260 265 270
 Val Ser Phe Thr Cys His Met Pro Asp Cys Leu Glu Met Pro Tyr Gln
 275 280 285

Pro	Ser	Val	Arg	Gly	Ala	Val	Met	Gly	Glu	Glu	Gly	Pro	Phe	Val	Tyr
290						295					300				
Arg	Leu	Gly	Gly	Asn	Ser	Cys	Leu	Ser	Gly	Asp	Tyr	Met	Gly	Ser	Trp
305				310						315					320
Ser	Phe	Asp	His	Glu	Leu	Gln	Ala	Gly	Glu	Arg	Ile	Val	Phe	Glu	Asp
			325						330					335	
Met	Ile	His	Tyr	Thr	Met	Val	Lys	Thr	Asn	Met	Phe	Asn	Gly	Ile	His
		340						345					350		
His	Pro	Ala	Ile	Ala	Leu	Trp	Thr	Ala	Asp	Gly	Lys	Ala	Glu	Ile	Phe
	355						360					365			
Arg	Gln	Phe	Ser	Tyr	Glu	Asp	Tyr	Arg	Asp	Arg	Met	Ser			
370						375					380				

<210> 5855

<211> 644

<212> PRT

<213> B.fragilis

<400> 5855

Ile	Ile	Met	Ile	Leu	Ile	Phe	Gly	Gly	Thr	Thr	Glu	Gly	Arg	Ala	Ala
1			5						10					15	
Val	Asn	Val	Ile	Glu	Glu	Ala	Gly	Lys	Pro	Tyr	Tyr	Tyr	Ser	Thr	Lys
		20						25					30		
Gly	Asp	Glu	Gln	Asp	Ile	Tyr	Leu	His	His	Gly	Ile	Arg	Leu	Ser	Gly
		35					40					45			
Ala	Met	Thr	Arg	Arg	Thr	Leu	Lys	Ala	Phe	Cys	Arg	Gln	Asn	Asp	Ile
	50					55					60				
Arg	Leu	Leu	Ile	Asp	Ala	Ala	His	Pro	Phe	Ala	Glu	Lys	Leu	His	Asp
65				70					75					80	
Thr	Val	Thr	Asp	Val	Ala	His	Asp	Leu	Gly	Ile	Pro	Cys	Ile	Arg	Tyr
			85						90					95	
Glu	Arg	Ile	Tyr	Asp	Arg	Ser	Tyr	Leu	Asn	Pro	Ile	Phe	Glu	Asp	Asn
		100					105						110		
Cys	Asp	Pro	Asp	Asp	Leu	Pro	Phe	Lys	Phe	Glu	Tyr	Asp	Asn	Arg	Asp
	115						120					125			
Leu	Leu	Arg	Glu	Leu	Lys	Lys	Glu	Lys	Glu	Gly	His	Arg	Phe	Leu	Phe
	130					135					140				
Leu	Thr	Gly	Val	Gln	Ser	Ile	Ala	Arg	Phe	Lys	Ser	Leu	Trp	Thr	Lys
145				150						155					160
Lys	Lys	Tyr	Glu	Cys	Tyr	Phe	Arg	Ile	Leu	Asp	Arg	Asp	Ser	Ser	Arg
			165						170					175	
Glu	Ile	Ala	Arg	Gln	Ala	Gly	Phe	Pro	Glu	Asp	His	Leu	Val	Tyr	Tyr
		180					185						190		
His	Pro	Glu	Thr	Glu	Asn	Leu	Pro	Gln	Leu	Leu	Gln	Glu	Leu	Ser	Pro
	195						200					205			
Gln	Ala	Val	Val	Leu	Lys	Glu	Ser	Gly	Lys	Ser	Gly	Gly	Phe	Thr	Glu
	210					215					220				
Lys	Lys	Asp	Met	Ile	Leu	Glu	Tyr	Gly	Ala	Thr	Pro	Tyr	Ile	Leu	Leu
225				230					235					240	
His	Pro	Glu	Leu	Glu	Tyr	Tyr	Asp	Ile	Thr	Val	Asp	Gly	Val	Asn	Ser
			245						250					255	
Leu	Arg	Arg	Thr	Leu	Glu	Lys	Met	Leu	Pro	Asp	Tyr	Phe	Pro	Leu	Arg
		260					265						270		
Ser	Gly	Leu	Thr	Thr	Gly	Ser	Cys	Ala	Ala	Ala	Ala	Ala	Ile	Ala	Ala
	275						280					285			
Phe	Arg	Lys	Leu	Lys	Asn	Pro	Ile	Leu	Glu	Asp	Phe	Asn	Arg	Asn	Ile
	290					295					300				
His	Thr	Val	Leu	Pro	Ser	Gly	Glu	Thr	Ile	Glu	Ile	Pro	Cys	Gln	Ser
305					310					315					320

Val Ser Gly Thr Phe Ser Asp Glu Lys Ile Glu Val Ser Ala Thr Val
 325 330 335
 Ile Lys Asp Gly Gly Asp Asp Pro Asp Val Thr Ser Gly Leu Pro Ile
 340 345 350
 Val Thr Thr Leu Thr Leu Asn Leu Ala Glu Ala Lys Gln Ala Asn Asn
 355 360 365
 Ala Pro Val Gln Thr Pro Glu Thr Trp Glu Phe Val Phe His Gly Gly
 370 375 380
 Pro Gly Val Gly Thr Val Thr Leu Pro Gly Leu Gly Leu Glu Val Gly
 385 390 395 400
 Gly Pro Ala Ile Asn Ala Thr Pro Arg Gln Met Ile Ile Asp Asn Leu
 405 410 415
 Arg Asn Cys Ile Arg Tyr Tyr Tyr Arg Tyr Leu Pro Asn Val Pro Ile
 420 425 430
 His Val Thr Ile Ser Val Pro Gly Gly Glu Glu Val Ala Ala Arg Thr
 435 440 445
 Phe Asn Pro Arg Leu Gly Val Val Gly Gly Ile Ser Ile Ile Gly Thr
 450 455 460
 Ser Gly Ile Val Lys Pro Phe Ser Ser Glu Ala Phe Val Arg Ser Ile
 465 470 475 480
 Arg Lys Glu Met Glu Val Ala Arg Ala Thr Gly Ala Cys Arg Ile Val
 485 490 495
 Ile Asn Ser Gly Ala Lys Ser Glu Lys Tyr Ile Arg Asn Leu Tyr Pro
 500 505 510
 Glu Leu Pro Pro Gln Ala Phe Val His Tyr Gly Asn Phe Ile Gly Glu
 515 520 525
 Thr Ile Gly Ile Ala Ala Glu Leu Gly Ile Ser Arg Leu Thr Leu Gly
 530 535 540
 Val Met Met Gly Lys Ala Val Lys Leu Ala Glu Gly His Leu Asp Thr
 545 550 555 560
 His Ser Lys Lys Val Thr Met Asn Lys Glu Phe Leu Lys Glu Ile Ala
 565 570 575
 Arg Arg Cys Gly Cys Thr Pro Ser Ser Ile Glu Ala Ile Asp His Ile
 580 585 590
 Ile Leu Ala Arg Glu Leu Trp Asn Ile Leu Pro Glu Thr Glu Leu Gln
 595 600 605
 Ala Phe Cys Ser Leu Leu Ile Glu Gln Cys His Arg His Cys Asp Val
 610 615 620
 Leu Leu Pro Asn Gly Glu Leu Thr Ile Leu Leu Ile Thr Glu Glu Gly
 625 630 635 640
 Lys Ile Ile Gln

<210> 5856

<211> 75

<212> PRT

<213> B.fragilis

<400> 5856

Leu Ser Tyr Val Ser Ser Ile Ala Pro Leu Pro Ile Lys Glu Val Ile
 1 5 10 15
 Thr Gly Lys Trp Cys Arg Leu Met Lys Ser Phe Ser Lys Thr Ile Ser
 20 25 30
 Glu Leu Gln His Pro Ala Pro Lys Ser Asn Met Gly Arg Trp Asp Asp
 35 40 45
 Ser Ile Asn Asn Leu Ile Ser Ser Gln Ala Ile Lys Gly Leu Phe Lys
 50 55 60
 Ile Leu Ser Pro Glu Tyr Pro Ile Asn Val Ser
 65 70 75

<210> 5857
 <211> 450
 <212> PRT
 <213> B.fragilis

<400> 5857

Phe	Gln	Arg	Val	Phe	Phe	Lys	Asn	Ile	Tyr	Asn	Phe	Leu	Gln	Leu	Asp
1				5					10					15	
Ala	Ala	Val	Ile	Tyr	Ser	Ser	Leu	Ser	Lys	Ile	Leu	Ser	Gly	Phe	Gly
			20					25					30		
Gly	Phe	Leu	Thr	Val	Tyr	Leu	Ile	Ala	Lys	Lys	Leu	Thr	Leu	Val	Glu
		35					40					45			
Gln	Gly	Tyr	Tyr	Tyr	Thr	Phe	Ile	Ser	Val	Leu	Tyr	Ile	Gln	Val	Phe
	50					55					60				
Phe	Glu	Leu	Gly	Leu	Asn	Ser	Ile	Ile	Thr	Gln	Phe	Val	Ala	His	Glu
65					70					75				80	
Lys	Ala	His	Leu	Asp	Trp	Lys	Gly	Lys	Asp	Asp	Leu	Val	Gly	Lys	Glu
			85						90					95	
Phe	His	Leu	Ser	Arg	Leu	Ala	Ser	Val	Leu	Arg	Leu	Cys	Val	Lys	Tyr
			100					105					110		
Tyr	Ser	Tyr	Leu	Ala	Ile	Gly	Leu	Leu	Ile	Val	Leu	Phe	Ile	Gly	Gly
		115					120						125		
Tyr	Val	Phe	Phe	Ser	Ile	Asn	Ser	Asn	Ile	Gly	Val	Ser	Trp	Lys	Ile
	130					135					140				
Pro	Trp	Leu	Leu	Leu	Cys	Val	Ser	Thr	Ser	Leu	Ser	Phe	Phe	Leu	Asn
145					150					155				160	
Pro	Phe	Leu	Ser	Phe	Leu	Glu	Gly	Leu	Asn	Leu	Met	Lys	Glu	Val	Cys
				165					170					175	
Phe	Ile	Arg	Phe	Ile	Gln	Gln	Thr	Val	Ser	Leu	Leu	Ile	Leu	Trp	Val
			180					185						190	
Gly	Leu	Ile	Gly	Gly	Met	Lys	Leu	Tyr	Val	Gly	Gly	Cys	Ser	Ser	Leu
		195					200					205			
Ala	Gly	Gly	Val	Ala	Ile	Leu	Ile	Phe	Val	Ser	Tyr	Arg	Tyr	Arg	Ile
	210					215					220				
Leu	Phe	Leu	Asn	Ile	Tyr	Gly	Lys	Val	Thr	Ile	His	Phe	Ile	Asn	Tyr
225					230					235				240	
Lys	Lys	Glu	Ile	Phe	Pro	Phe	Gln	Trp	Lys	Val	Ala	Val	Gly	Trp	Leu
			245						250					255	
Ser	Ser	Ser	Leu	Val	Phe	Gln	Phe	Phe	Asn	Pro	Ile	Leu	Phe	Ala	Thr
			260					265					270		
Ile	Gly	Ser	Ala	Ala	Ala	Gly	Gln	Leu	Gly	Met	Thr	Leu	Ser	Val	Ile
		275					280					285			
Asn	Gly	Val	Ser	Ser	Val	Ser	Met	Asn	Trp	Ile	Tyr	Thr	Lys	Val	Pro
	290					295					300				
Asn	Leu	Ser	Lys	Leu	Val	Ser	Leu	Arg	Asp	Phe	Lys	Glu	Leu	Asp	Lys
305					310					315				320	
Ser	Phe	Ser	Lys	Ile	Leu	Ala	Val	Leu	Val	Leu	Leu	Ser	Cys	Met	Gly
			325						330					335	
Phe	Ile	Ile	Val	Ala	Leu	Cys	Leu	Ile	Gln	Phe	Asn	Ile	Leu	His	Ile
			340					345					350		
Ala	Ser	Lys	Leu	Leu	Pro	Met	Ser	Leu	Phe	Leu	Ile	Met	Ser	Leu	Ser
		355					360					365			
Ser	Val	Phe	Thr	Gln	Ile	Thr	Ser	Cys	Trp	Ala	Ile	Tyr	Phe	Arg	Cys
	370					375					380				
Phe	Lys	Lys	Glu	Pro	Phe	Leu	Arg	Val	Ser	Leu	Ile	Asn	Leu	Ala	Val
385					390					395				400	
Val	Phe	Leu	Ile	Val	Phe	Pro	Cys	Thr	Leu	Tyr	Tyr	Arg	Leu	Ser	Gly
			405						410					415	

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<400> 5858															
Ser	Leu	Val	Val	Lys	Leu	Phe	Val	Gln	Ser	Arg	Leu	Phe	Phe	Thr	Ile
1				5					10					15	
Glu	Ser	Glu	Ala	Ile	Leu	Glu	Ile	Lys	Val	Phe	Leu	Lys	Ile	Ile	Ile
			20					25					30		
His	Tyr	Tyr	Val	Lys	Leu	Tyr	Thr	Lys	Ile	Ile	Asn	Thr	Tyr	Phe	Leu
		35					40					45			
Pro	Phe	Ser	Leu	Ile	Arg	Ser	Ile	His	Leu	Ser	Ile	Ile			
	50					55					60				

<400> 5859															
Asn	Thr	Ala	Phe	Pro	Phe	Leu	Phe	Pro	Thr	Phe	Val	Leu	Arg	Ile	Lys
1				5					10					15	
Asn	Gln	Asp	Ser	Lys	Met	Lys	Lys	Phe	Ile	Lys	Gly	Val	Arg	Phe	Thr
			20					25					30		
Pro	Ser	Asn	Tyr	Pro	Asp	Glu	Ile	Glu	Asp	Lys	Ile	Gln	Lys	Tyr	Arg
		35					40					45			
Lys	Gln	Gly	Tyr	Lys	Leu	Pro	Pro	Arg	Lys	Val	Leu	Arg	Thr	Pro	Glu
	50					55					60				
Gln	Ile	Glu	Gly	Ile	Arg	Glu	Ser	Ala	Lys	Ile	Asn	Thr	Ala	Leu	Leu
65					70					75					80
Asn	His	Ile	Ala	Glu	Asn	Ile	Arg	Glu	Gly	Met	Ser	Thr	Glu	Glu	Ile
				85					90					95	
Asp	Arg	Leu	Val	Tyr	Asp	Phe	Thr	Thr	Ser	His	Gly	Ala	Ile	Pro	Ala
			100					105					110		
Pro	Leu	Asn	Tyr	Glu	Gly	Phe	Pro	Lys	Ser	Val	Cys	Thr	Ser	Ile	Asn
		115					120					125			
Asp	Val	Val	Cys	His	Gly	Ile	Pro	Ser	Ser	Thr	Glu	Ile	Leu	Lys	Ser
	130					135					140				
Gly	Asp	Ile	Ile	Asn	Val	Asp	Val	Ser	Thr	Ile	Tyr	Asn	Gly	Tyr	Phe
145					150					155					160
Ser	Asp	Ala	Ser	Arg	Met	Phe	Met	Ile	Gly	Glu	Val	Ser	Pro	Glu	Lys
				165					170					175	
Gln	Arg	Leu	Val	Gln	Val	Thr	Lys	Glu	Cys	Met	Glu	Ile	Gly	Ile	Ala
			180					185					190		
Ala	Ala	Gln	Pro	Trp	Ala	Arg	Leu	Gly	Asp	Val	Gly	Ala	Ala	Ile	Gln
		195					200					205			
Glu	His	Ala	Glu	Lys	Asn	Gly	Tyr	Ser	Val	Val	Arg	Asp	Leu	Cys	Gly
	210					215					220				
His	Gly	Val	Gly	Ile	Lys	Phe	His	Glu	Glu	Pro	Asp	Val	Glu	His	Phe
225					230					235					240
Gly	Arg	Arg	Gly	Thr	Gly	Met	Leu	Ile	Leu	Pro	Gly	Met	Thr	Phe	Thr

245 250 255
 Ile Glu Pro Met Ile Asn Met Gly Thr Tyr Glu Val Phe Val Asp Ser
 260 265 270
 Ala Asp Asp Trp Thr Val Cys Thr Asp Asp Gly Leu Pro Ser Ala Gln
 275 280 285
 Trp Glu Asn Met Ile Leu Ile Thr Glu Thr Gly Asn Glu Ile Leu Thr
 290 295 300
 Tyr
 305

<210> 5860
 <211> 336
 <212> PRT
 <213> B.fragilis

<400> 5860
 Cys Val Lys Leu Tyr Ile Val Leu Lys Asn Lys Phe Arg Asn Leu Phe
 1 5 10 15
 Leu Ala Phe Gly Ile Leu Ala Val Ile Ile Met Leu Phe Thr Phe Asp
 20 25 30
 Val Ser Tyr Asp Glu Leu Leu Asp Asn Leu Arg Arg Ala Gly Phe Tyr
 35 40 45
 Leu Pro Leu Val Leu Val Leu Trp Leu Phe Ile Tyr Leu Ile Asn Thr
 50 55 60
 Leu Ser Trp Tyr Ile Ile Leu Arg Ser Ser Gly Pro Val Asn Ser Leu
 65 70 75 80
 Ser Phe Ala Arg Leu Tyr Lys Phe Thr Val Ser Gly Phe Ala Leu Asn
 85 90 95
 Tyr Val Thr Pro Val Gly Leu Met Gly Gly Glu Pro Tyr Arg Ile Met
 100 105 110
 Glu Leu Thr Ser Tyr Val Gly Val Glu Arg Ala Thr Ser Ser Val Ile
 115 120 125
 Leu Tyr Val Met Met His Ile Phe Ser His Phe Cys Phe Trp Leu Ser
 130 135 140
 Ser Val Leu Ile Tyr Val Phe Phe Tyr Pro Val Gly Trp Gly Met Gly
 145 150 155 160
 Ile Val Leu Gly Leu Ile Thr Leu Phe Cys Leu Leu Leu Val Thr Leu
 165 170 175
 Phe Ile Lys Gly Tyr Arg Asn Gly Met Ala Val Ala Cys Val Arg Leu
 180 185 190
 Gly Ser His Ile Pro Phe Leu Lys Lys Arg Ala Val Arg Phe Ala Glu
 195 200 205
 Leu His Lys Glu Lys Leu Glu Thr Ile Asp Arg Gln Ile Ala Leu Leu
 210 215 220
 His Gln Gln Arg Lys Ser Thr Phe Tyr Ser Ala Leu Gly Leu Glu Tyr
 225 230 235 240
 Thr Ala Arg Ile Val Gly Cys Leu Glu Val Trp Leu Ile Leu Asn Val
 245 250 255
 Leu Thr Thr Asp Val Ser Phe Val Gly Cys Ile Leu Ile Val Ala Phe
 260 265 270
 Ser Ser Leu Ala Asn Leu Leu Phe Phe Leu Pro Met Gln Leu Gly
 275 280 285
 Gly Arg Glu Gly Gly Phe Ala Leu Ala Val Ala Gly Leu Ser Leu Ser
 290 295 300
 Gly Ala Tyr Gly Val Phe Ala Ala Leu Ile Thr Arg Val Arg Glu Met
 305 310 315 320
 Val Trp Ile Val Ile Gly Leu Val Leu Met Lys Ile Gly Asn Arg Arg
 325 330 335

<210> 5861
 <211> 282
 <212> PRT
 <213> B.fragilis

<400> 5861

Arg	Pro	Thr	Ser	Ser	Val	Phe	Ser	Val	Ile	Arg	Glu	Pro	Thr	Gly	Glu
1				5					10					15	
Thr	Pro	Glu	Gln	Leu	Ala	Ala	Leu	Leu	Lys	Glu	Gly	Thr	Phe	Met	Val
			20					25					30		
Ser	Arg	Asn	Val	Phe	Glu	Ser	Arg	Tyr	Lys	Ile	Asp	Leu	Lys	Asp	Tyr
		35					40				45				
Val	Gly	Lys	Glu	Phe	Cys	Leu	Asp	Gln	Asp	Thr	Ala	His	Leu	Ser	Lys
	50					55					60				
Leu	Val	Ala	Ala	Leu	Gln	Val	Val	Arg	Tyr	Asp	Asp	Phe	Ser	Ser	Gly
65					70				75						80
Ala	Tyr	Ser	Arg	Ser	Ala	Val	Ile	Leu	Leu	Pro	Glu	Asn	Arg	Leu	Ala
				85				90						95	
Ser	Gly	Asn	Glu	Ile	Cys	Leu	Arg	Thr	Asn	Lys	Asn	Glu	Ser	Ala	Ala
		100						105						110	
Phe	Ala	Glu	Gln	Leu	Met	Lys	Asp	Ala	Pro	Ser	Gln	Tyr	Arg	Val	Gly
		115					120						125		
Asn	Leu	Phe	Leu	Thr	Lys	Val	Ser	Ser	Phe	Arg	Asp	Ile	Arg	His	Thr
		130				135					140				
Phe	Gln	Leu	Asp	Asp	Val	Asn	Thr	Leu	Arg	Asn	Tyr	Leu	Val	Gly	Met
145					150					155					160
Gly	Phe	Leu	Leu	Leu	Asn	Ile	Phe	Leu	Gly	Leu	Leu	Gly	Thr	Phe	Trp
				165					170					175	
Phe	Arg	Thr	Gln	Gln	Arg	Lys	Gly	Glu	Met	Ala	Leu	Met	Met	Ala	Val
			180					185					190		
Gly	Gly	Ser	Lys	Gln	Ser	Val	Phe	Phe	Arg	Leu	Leu	Ser	Glu	Gly	Trp
		195					200					205			
Leu	Met	Leu	Leu	Leu	Val	Thr	Pro	Leu	Ala	Ile	Gly	Val	Asp	Phe	Tyr
	210					215					220				
Ile	Ala	Lys	Ser	Glu	Leu	Thr	Pro	Ser	Trp	Tyr	Phe	Ser	Thr	Phe	Ser
225					230					235					240
Val	Gly	Arg	Phe	Met	Leu	Cys	Glu	Gly	Ile	Thr	Leu	Leu	Leu	Met	Ala
			245					250						255	
Leu	Met	Ile	Leu	Ala	Gly	Ile	Trp	Phe	Pro	Ala	Arg	Gln	Ser	Met	Lys
		260						265						270	
Ile	Gln	Pro	Ala	Glu	Ala	Leu	His	Glu	Glu						
		275					280								

<210> 5862
 <211> 146
 <212> PRT
 <213> B.fragilis

<400> 5862

Ser	Glu	Ile	Pro	Ile	Thr	Thr	Pro	Pro	Phe	Ala	Val	Pro	Ser	Asn	Leu
1				5					10					15	
Val	Ile	Ala	Ile	Ala	Val	Thr	Ser	Val	Ala	Ser	Val	Asn	Cys	Phe	Ala
		20						25					30		
Cys	Ser	Lys	Ala	Phe	Cys	Pro	Val	Glu	Pro	Ser	Ser	Thr	Asn	Asn	Thr
		35					40					45			
Ser	Phe	Gly	Ala	Ser	Gly	Thr	Thr	Phe	Phe	Ile	Thr	Phe	Leu	Ile	Phe
	50					55					60				
Val	Ser	Ser	Phe	Ile	Lys	Pro	Thr	Leu	Leu	Cys	Lys	Arg	Pro	Ala	Val
65					70					75					80

[illegible]

<400> 5863

Thr 1	Lys	Leu	Thr	Gly 5	Lys	Met	Asn	Lys	Tyr 10	Ile	Leu	Leu	Ile	Val 15	Leu
Leu	Phe	Leu	Val 20	Ser	Gly	Arg	Ile	Ala 25	Ala	Gln	Ser	Val 30	Thr	Val	Asp
Ala	Lys	Ile 35	Asp	Ser	Leu	Gln	Ile 40	Leu	Ile	Gly	Glu 45	Gln	Ala	Lys	Val
Gln	Leu	Gln	Val	Ala	Met	Asp 55	Ala	Lys	Gln	Arg	Ala 60	Val	Phe	Pro	Ser
Phe 65	Thr	Asp	Thr	Leu	Val 70	Arg	Gly	Val	Glu	Ile 75	Val	Asp	Ile	Ala	Lys
Pro	Asp	Thr	Gln	Tyr 85	Leu	Asn	Asp	Arg	Gln 90	Arg	Met	Leu	Ile	Thr 95	Gln
Glu	Tyr	Thr	Val 100	Thr	Ser	Phe	Asp 105	Ser	Ala	Leu	Tyr	Tyr 110	Ile	Pro	Pro
Met	Gly	Val 115	Lys	Ile	Asp	Asn 120	Lys	Glu	Tyr	Lys	Ser 125	Lys	Ala	Leu	Ala
Leu	Lys 130	Val	Tyr	Ser	Met	Pro 135	Val	Asp	Thr	Leu	His 140	Pro	Asp	Gln	Phe
Phe 145	Gly	Gln	Lys	Thr	Val 150	Met	Lys	Ala	Pro	Phe 155	Ala	Trp	Glu	Asp	Trp
Tyr	Gly	Leu	Ile	Ala 165	Cys	Ser	Phe	Leu 170	Ala	Leu	Pro	Leu	Leu	Gly 175	Leu
Leu	Ile	Tyr	Leu 180	Ile	Ile	Arg	Ile 185	Arg	Asp	Asn	Lys	Pro 190	Ile	Ile	Arg
Lys	Val	Lys 195	Val	Glu	Pro	Lys 200	Leu	Pro	Pro	His	Gln 205	Leu	Ala	Met	Lys
Glu	Ile 210	Glu	Arg	Ile	Lys	Thr 215	Glu	Lys	Ile	Trp	Gln 220	Lys	Gly	Gln	Ser
Lys 225	Glu	Tyr	Tyr	Thr	Glu 230	Leu	Thr	Asp	Ala 235	Leu	Arg	Thr	Tyr	Ile	Lys
Asn	Arg	Phe	Gly	Phe 245	Asn	Ala	Leu	Glu	Met 250	Thr	Ser	Ser	Glu	Ile	Ile
Asp	Lys	Leu	Leu 260	Glu	Phe	Asn 265	Asp	Lys	Glu 265	Ala	Ile	Ser	Asp	Leu	Lys
Tyr	Leu	Phe 275	Gln	Thr	Ala	Asp 280	Leu	Val	Lys	Phe	Ala 285	Lys	His	Asp	Pro
Gln	Met 290	Asn	Glu	Asn	Asp	Ala 295	Asn	Leu	Ile	Asn 300	Ala	Ile	Asp	Phe	Ile
Asn 305	Glu	Thr	Lys	Gln	Leu 310	Glu	Glu	Glu	Asn 315	Gln	Lys	Pro	Gln	Pro	Thr
Glu	Ile	Thr	Ile	Ile 325	Glu	Lys	Arg	Ser	Leu 330	Arg	Thr	Lys	Ile	Leu	Leu

Ile Cys Gly Ile Val Phe Leu Ser Ala Ala Leu Ile Ala Thr Phe Val
 340 345 350
 Tyr Ile Gly Leu Gln Leu Tyr Asn Leu Phe Gly
 355 360

<210> 5864
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 5864
 Asp Met Arg Thr Ile Thr Phe Asn Glu Leu Arg Lys Ile Lys Asp Ser
 1 5 10 15
 Leu Pro Ser Gly Ser Met His Arg Ile Ala Asp Glu Leu Asn Leu Asn
 20 25 30
 Val Asp Thr Val Arg Asn Phe Phe Gly Gly His Asn Phe Lys Glu Gly
 35 40 45
 Lys Ser Val Gly Ile His Leu Glu Pro Gly Pro Asp Gly Gly Leu Val
 50 55 60
 Met Ile Asp Asp Thr Thr Val Leu Asp Arg Ala Leu Arg Ile Leu Asp
 65 70 75 80
 Glu Leu Asn Met Ser Lys Glu Glu Ala Thr Glu Ser Val Gln Val
 85 90 95

<210> 5865
 <211> 232
 <212> PRT
 <213> B.fragilis

<400> 5865
 Ile Ser Arg Ala Ile Ile Ser Ser Ala Val Asn Leu Gly Glu Pro Ser
 1 5 10 15
 Ser Ser Ile Thr Phe Phe Lys Leu Ser Val Val Ser Cys Pro Val Ser
 20 25 30
 Pro Val Thr Trp Ile Gly Ser Ser Glu Phe Ser Thr Thr Leu Ser Asn
 35 40 45
 Pro Pro Ser Ser Arg Thr Ser Ala Met Asp Glu Pro Ser Thr Thr Ala
 50 55 60
 Ser Leu Pro Leu Cys Met Leu Thr Ser Ser Thr Val Ser Ser Met Ser
 65 70 75 80
 Ile Ser Ser Thr Thr Ser Val Leu Ser Asp Ser Phe Ile Thr Ser Glu
 85 90 95
 Thr Ser Ser Ala Thr Ser Thr Ser Asp Asp Thr Thr Ser Cys Pro Phe
 100 105 110
 Glu Val Ser Gly Ser Thr Phe Pro Phe Ala Ser Val Ser Thr Thr Phe
 115 120 125
 Ser Ser Ala Phe Ala Ser Ser Leu Ser Thr Val Ser Val Ile Asn Gly
 130 135 140
 Ser Ser Val Val Ser Asp Ile Phe Pro Asp Ser Ser Ser Asn Ser Ser
 145 150 155 160
 Ile Gly Val Ser Ser Lys Thr Val Phe Ser Phe Ser Thr Thr Val Ser
 165 170 175
 Lys Cys Glu Lys Gly Leu Phe Met Ile Ser Leu Lys Glu Gly Ser Gly
 180 185 190
 Val Lys Glu Ile Leu Val Cys Pro Ser Ile Leu Ile Arg Ser Pro Val
 195 200 205
 Leu Thr Phe Thr Leu Ser Arg Leu Leu Thr Pro Ile Asn Leu Asn Val
 210 215 220
 Pro Asn Pro Leu Ile Phe Thr Tyr

225

230

<210> 5866
 <211> 240
 <212> PRT
 <213> B.fragilis

<400> 5866

Val	Val	Met	Tyr	Met	Ser	Arg	Asn	Lys	Tyr	Ile	Leu	Phe	Ala	Leu	Leu
1				5					10					15	
Leu	Ser	Leu	Ser	Ala	Gly	Ala	Phe	Ala	Gln	Lys	Ala	Glu	Arg	Asp	Tyr
			20					25					30		
Ile	Arg	Lys	Gly	Asn	Arg	Leu	Phe	Lys	Asp	Ser	Val	Phe	Val	Asp	Ala
		35					40					45			
Glu	Val	Asn	Tyr	Arg	Lys	Ala	Leu	Glu	Ala	Asn	Pro	Lys	Ser	Thr	Ile
	50					55					60				
Ser	Met	Tyr	Asn	Leu	Gly	Asn	Thr	Leu	Ser	Gln	Gln	Gln	Lys	Phe	Lys
65					70					75					80
Asp	Ala	Met	Glu	Gln	Tyr	Val	Ala	Ala	Thr	Ser	Ile	Glu	Lys	Asp	Lys
				85					90					95	
Ala	Lys	Leu	Gly	Gln	Ile	Tyr	His	Asn	Met	Gly	Val	Leu	Phe	Gln	Ser
			100					105						110	
Gly	Lys	Asp	Tyr	Gln	Lys	Ala	Val	Glu	Ala	Tyr	Lys	Met	Ser	Leu	Arg
		115					120					125			
Asn	Asn	Pro	Lys	Asp	Asp	Glu	Thr	Arg	Tyr	Asn	Leu	Ala	Leu	Ala	Gln
	130					135					140				
Lys	Leu	Leu	Lys	Asp	Gln	Gln	Gln	Asn	Gln	Gln	Asn	Gln	Asp	Gln	Asn
145					150					155					160
Gln	Asp	Gln	Asn	Lys	Asp	Asp	Gln	Gln	Lys	Gln	Gln	Asp	Lys	Lys	Asp
				165					170					175	
Gln	Asn	Lys	Gln	Asn	Asp	Gln	Asn	Lys	Asp	Gln	Gln	Gln	Gln	Gln	Pro
			180					185						190	
Pro	Lys	Ser	Glu	Lys	Asn	Asp	Asn	Glu	Met	Ser	Lys	Glu	Asn	Ala	Glu
	195					200						205			
Gln	Leu	Leu	Asn	Ser	Val	Met	Gln	Asp	Glu	Lys	Gly	Val	Gln	Asp	Lys
	210					215					220				
Val	Lys	Lys	Gln	Gln	Thr	Leu	Gln	Gly	Arg	Arg	Leu	Glu	Lys	Asp	Trp
225					230					235					240

<210> 5867
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 5867

Glu	Ile	Asp	Phe	Thr	Tyr	Phe	Ser	Phe	Cys	Val	Thr	Leu	Leu	Phe	Arg
1				5					10					15	
Ile	Arg	Ser	Ser	Lys	Lys	Lys	Arg	Leu	Pro	Asn	Phe	Ser	Asn	Gln	Ala
			20					25					30		
Thr	Pro	Phe	Thr	Lys	Ile	Phe	Ala	Lys	Lys	Asp	Leu	Phe	Asp	His	Tyr
		35					40					45			
Ile	Ile	Phe	Ser	Ile	Ser	Ser	Asn	Ser	Gly	Pro	Ile	Phe	Arg	Leu	
	50					55					60				

<210> 5868
 <211> 355
 <212> PRT
 <213> B.fragilis

<400> 5868

Ile Leu Leu Leu Ser Leu Leu Leu His Arg Leu Asn Ile Lys Lys Arg
 1 5 10 15
 Met Ser Thr Ile Ile Leu Gly Ile Glu Ser Ser Cys Asp Asp Thr Ser
 20 25 30
 Ala Ala Val Ile Lys Asp Gly Tyr Leu Leu Ser Asn Val Val Ser Ser
 35 40 45
 Gln Ala Val His Glu Ala Tyr Gly Gly Val Val Pro Glu Leu Ala Ser
 50 55 60
 Arg Ala His Gln Gln Asn Ile Val Pro Val Val His Glu Ala Leu Lys
 65 70 75 80
 Arg Ala Gly Val Thr Lys Glu Glu Leu Ser Ala Val Ala Phe Thr Arg
 85 90 95
 Gly Pro Gly Leu Met Gly Ser Leu Leu Val Gly Val Ser Phe Ala Lys
 100 105 110
 Gly Phe Ala Arg Ser Leu Asn Ile Pro Met Ile Asp Val Asn His Leu
 115 120 125
 Thr Gly His Val Leu Ala His Phe Ile Lys Glu Glu Gly Glu Ala Asn
 130 135 140
 Glu Gln Pro Asp Phe Pro Phe Leu Cys Leu Leu Val Ser Gly Gly Asn
 145 150 155 160
 Ser Gln Ile Ile Leu Val Lys Ala Tyr Asn Asp Met Glu Ile Leu Gly
 165 170 175
 Gln Thr Ile Asp Asp Ala Ala Gly Glu Ala Ile Asp Lys Cys Ser Lys
 180 185 190
 Val Met Gly Leu Gly Tyr Pro Gly Gly Pro Ile Ile Asp Arg Leu Ala
 195 200 205
 Arg Gln Gly Asn Pro Lys Ala Tyr Thr Phe Ser Lys Pro His Ile Ser
 210 215 220
 Gly Leu Asp Tyr Ser Phe Ser Gly Leu Lys Thr Ser Phe Leu Tyr Ser
 225 230 235 240
 Leu Arg Asp Trp Met Lys Glu Asp Pro Asp Phe Ile Glu His His Lys
 245 250 255
 Asn Asp Leu Ala Ala Ser Leu Glu Ala Thr Val Val Asp Ile Leu Met
 260 265 270
 Asp Lys Leu Arg Lys Ala Ala Lys Gln Tyr Lys Ile Asn Glu Val Ala
 275 280 285
 Val Ala Gly Gly Val Ser Ala Asn Asn Gly Leu Arg Asn Ala Phe Arg
 290 295 300
 Glu His Ala Glu Lys Tyr Gly Trp Lys Ile Phe Ile Pro Lys Phe Ser
 305 310 315 320
 Tyr Thr Thr Asp Asn Ala Ala Met Ile Ala Ile Thr Gly Tyr Phe Lys
 325 330 335
 Tyr Gln Asp Lys Asp Phe Cys Ser Ile Glu Gln Pro Ala Tyr Ser Arg
 340 345 350
 Val Thr Leu
 355

<210> 5869

<211> 216

<212> PRT

<213> B.fragilis

<400> 5869

Arg Arg Tyr His Lys Ile Asp Lys Lys Met Phe Arg Phe Glu Glu Pro
 1 5 10 15
 Ala Tyr Leu Tyr Leu Leu Leu Leu Leu Pro Leu Leu Ala Ala Phe Tyr
 20 25 30
 Leu Tyr Ser Asn Tyr Arg Lys Arg Lys Ala Ile Arg Lys Phe Gly Asp

35	40	45
Pro Val Leu Met Ala Gln	Leu Met Pro Asp Val Ser Lys Tyr Arg Pro	
50	55	60
Asp Val Lys Phe Trp Leu	Leu Phe Thr Ala Ile Gly Leu Phe Ala Val	
65	70	75
Leu Leu Ala Arg Pro Gln	Phe Gly Ser Lys Leu Glu Thr Val Lys Arg	
	85	90
Lys Gly Val Glu Val Met	Ile Ala Leu Asp Ile Ser Asn Ser Met Leu	
	100	105
Ala Gln Asp Val Gln Pro	Ser Arg Leu Glu Lys Ala Lys Arg Leu Ile	
	115	120
Ser Lys Leu Val Asp Gly	Met Glu Asn Asp Lys Val Gly Met Ile Val	
	130	135
Phe Ala Gly Asp Ala Phe	Thr Gln Leu Pro Ile Thr Ser Asp Tyr Ile	
145	150	155
Ser Ala Lys Met Phe Leu	Glu Ser Ile Ser Pro Ser Leu Ile Ser Lys	
	165	170
Gln Gly Thr Ala Ile Gly	Ala Ala Ile Asn Leu Ala Ala Arg Ser Phe	
	180	185
Thr Pro Gln Glu Gly Val	Gly Arg Ala Ile Val Val Ile Thr Asp Gly	
	195	200
Glu Asn His Glu Arg Gly	Ser Cys	205
210	215	

<210> 5870

<211> 327

<212> PRT

<213> B.fragilis

<400> 5870

Cys Ile Ile Gln Ile Ile	Val Ile Met Gly Phe Phe Ser Phe Phe Ser
1	5 10 15
Lys Glu Lys Lys Glu Thr	Leu Asp Lys Gly Leu Ser Lys Thr Lys Glu
	20 25 30
Ser Val Phe Ser Lys Ile	Ala Arg Ala Val Ala Gly Lys Ser Lys Val
	35 40 45
Asp Asp Glu Val Leu Asp	Asn Leu Glu Glu Val Leu Ile Thr Ser Asp
50	55 60
Val Gly Val Glu Thr Thr	Leu Asn Ile Ile Lys Arg Ile Glu Lys Arg
65	70 75 80
Ala Ala Glu Asp Lys Tyr	Val Asn Thr Gln Glu Leu Asn Ser Ile Leu
	85 90 95
Arg Glu Glu Ile Ala Ala	Leu Leu Thr Glu Asn Asn Ser Asp Asp Val
	100 105 110
Ala Asp Phe Asp Val Pro	Val Glu Lys Lys Pro Tyr Val Ile Met Val
	115 120 125
Val Gly Val Asn Gly Val	Gly Lys Thr Thr Thr Ile Gly Lys Leu Ala
	130 135 140
Tyr Gln Phe Lys Lys Ala	Gly Lys Ser Val Tyr Leu Gly Ala Ala Asp
145	150 155 160
Thr Phe Arg Ala Ala Val	Glu Gln Leu Val Ile Trp Gly Glu Arg
	165 170 175
Val Asp Val Pro Val Ile	Lys Gln Lys Met Gly Ala Asp Pro Ala Ser
	180 185 190
Val Ala Phe Asp Thr Leu	Ser Ser Ala Val Ala Asn Asn Ala Asp Val
	195 200 205
Val Ile Ile Asp Thr Ala	Gly Arg Leu His Asn Lys Val Gly Leu Met
210	215 220
Asn Glu Leu Thr Lys Ile	Lys Asn Val Met Lys Lys Val Val Pro Asp

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225 230 235 240
 Ala Pro Asn Glu Val Leu Leu Val Leu Asp Gly Ser Thr Gly Gln Asn
 245 250 255
 Ala Phe Glu Gln Ala Lys Gln Phe Thr Leu Ala Thr Glu Val Thr Ala
 260 265 270
 Met Ala Ile Thr Lys Leu Asp Gly Thr Ala Lys Gly Gly Val Val Ile
 275 280 285
 Gly Ile Ser Asp Gln Phe Lys Ile Pro Val Lys Tyr Ile Gly Leu Gly
 290 295 300
 Glu Gly Met Glu Asp Leu Gln Val Phe Arg Lys Lys Glu Phe Val Asp
 305 310 315 320
 Ser Leu Phe Gly Glu Asn Ala
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<210> 5871

<211> 399

<212> PRT

<213> B.fragilis

<400> 5871

Ile Arg Asp Lys Val Arg Ile Pro Ile Gly Lys Thr Ile Gly Ile Ser
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 Thr Leu Ala Ile Leu Thr Tyr Thr Lys Ala Gln Ile Leu Lys Asn Val
 35 40 45
 Leu Glu Asn Glu Gly Ile Glu Thr Tyr Ile His Asn Val Asn Gln Ile
 50 55 60
 Gln Pro Val Val Ser Ser Gly Val Arg Leu Arg Ile Lys Glu Ser Asp
 65 70 75 80
 Leu Pro Arg Ala Leu Lys Ile Thr Glu Ser Ser Ala Trp Leu Ala Glu
 85 90 95
 Ser Ile Val Gly Glu Lys Thr Pro Lys Val Glu His Arg Thr Lys Lys
 100 105 110
 Val Leu Ile Pro Val Asp Phe Ser Asn Tyr Ser Met Lys Ala Cys Glu
 115 120 125
 Phe Gly Phe Asn Phe Ala Lys Ser Phe Asp Ala Glu Val Ile Leu Leu
 130 135 140
 His Val Tyr Phe Thr Pro Ile Tyr Ala Ser Ser Leu Pro Tyr Gly Asp
 145 150 155 160
 Val Phe Asn Tyr Gln Ile Ser Asp Glu Glu Thr Val Lys Asn Val Leu
 165 170 175
 His Lys Val His Asp Asp Leu Asn Thr Leu Ser Glu Lys Ile Lys Gln
 180 185 190
 Lys Val Ala Ser Gly Glu Phe Pro Asp Val Lys His Thr Cys Val Leu
 195 200 205
 Arg Glu Gly Ile Pro Glu Glu Glu Ile Leu Arg Tyr Asn Lys Glu His
 210 215 220
 Arg Pro Arg Ile Ile Ile Met Gly Thr Arg Gly Lys Asn Gln Lys Asp
 225 230 235 240
 Ile Asp Leu Ile Gly Ser Val Thr Ala Glu Ile Ile Glu Arg Ser His
 245 250 255
 Thr Thr Val Leu Ala Ile Pro Glu Asn Thr Pro Phe Asn Arg Phe Asn
 260 265 270
 Glu Val Lys Arg Ile Ala Phe Met Thr Asn Phe Asp Gln Arg Asp Leu
 275 280 285
 Ile Ala Phe Asp Ser Phe Ile Asn Gly Leu Ser Pro Phe His Phe Ser
 290 295 300
 Val Ser Leu Ile His Leu Ser Asp Val Lys Asp Thr Trp Asn Glu Ile

305 310 315 320
 Lys Leu Ala Gly Ile Lys Asp Tyr Phe Gln Lys Gln Tyr Pro Asp Leu
 325 330 335
 Glu Ile Tyr Tyr Asp Val Val Met Ser Asn Asp Phe Leu Asn Ser Leu
 340 345 350
 Asp Asn Tyr Ile Lys Thr Asn Gln Ile Asp Ile Ile Thr Leu Thr Ser
 355 360 365
 Tyr Lys Arg Asn Ile Phe Ser Arg Leu Phe Asn Pro Gly Ile Ala Arg
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 Lys Met Ile Phe His Ser Asp Thr Pro Leu Leu Val Ile Asn Gly
 385 390 395

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 <212> PRT
 <213> B.fragilis

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 Thr Phe Ser Lys Thr Ala Ser Leu Lys Ile Ser Leu Val Pro Lys Tyr
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 Leu Gln Arg Val Cys Leu Val Ile Ser Ser Leu Val Gly Pro Lys Pro
 35 40 45
 Pro Val Thr Ser Thr Ile Phe Ala Leu Phe Ile Glu Ala Ser Thr Ala
 50 55 60
 Ser Ile Ile Ser Ser Ala Arg Ser Arg Thr Asp Thr Thr Arg Ile Thr
 65 70 75 80
 Ser Ile Pro Thr Leu Phe Asn Ser Arg Pro Ile His Ala Glu Leu Val
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 Ser Val Thr Cys Pro Ile Asn Ser Ser Ser Pro Ile Val Ile Ile Ser
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 Ala Asn Ile Gly Leu Leu Gln Ser Tyr Thr
 115 120

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 <212> PRT
 <213> B.fragilis

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 Val Phe Thr Ala Ser Ala Pro Asp Ala Val Val Val Gly Asp Gln Phe
 35 40 45
 Arg Leu Ser Tyr Thr Val Asn Thr Ile Lys Val Arg Asp Phe Arg Val
 50 55 60
 Pro Ser Ile Lys Gly Phe Glu Val Leu Met Gly Pro Asn Arg Ser Gln
 65 70 75 80
 Arg Met Gln Ser Ile Asn Gly Val Thr Asn Asn Ser Ile Thr Phe Thr
 85 90 95
 Tyr Ile Leu Met Ala Thr Ala Glu Gly Glu Tyr Ser Ile Pro Gly Ala
 100 105 110
 Thr Ile Thr Ala Asp Gly Asn Gln Met Val Ser Asn Ser Val Lys Ile
 115 120 125
 Lys Val Leu Pro Ser Asp Lys Thr Gly Asn Thr Ala Asp Gly Lys Gly
 130 135 140

Thr Ala Ser Ser Gly Asn Gln Ser Gly Thr Ser Ser Ser Val Ser Asn
 145 150 155 160
 Gln Asp Leu Leu Ile Thr Ala Thr Ala Asn Lys Thr Asn Val Tyr Glu
 165 170 175
 Gln Glu Ala Phe Leu Leu Thr Phe Lys Ile Tyr Thr Arg Glu Ser Gln
 180 185 190
 Leu Arg Phe Glu Asn Val Lys Leu Pro Asp Phe Lys Gly Phe His Ser
 195 200 205
 Gln Glu Ile Glu Met Pro Ala Asn Ala Lys Trp Ser Gln Glu His Tyr
 210 215 220
 Lys Gly Lys Asn Tyr Phe Thr Thr Val Tyr Arg Gln Phe Val Leu Phe
 225 230 235 240
 Pro Gln Gln Ser Gly Lys Leu Thr Ile Glu Pro Ala Arg Phe Asp Ala
 245 250 255
 Thr Ile Ala Lys Ala Val Gln Ser Asp Asp Pro Phe Asp Ala Phe Phe
 260 265 270
 Asn Gly Gly Ser Asn Tyr Val Asn Val Ser Lys Val Ile Val Thr Pro
 275 280 285
 Lys Ile Thr Val Asn Val Asn Pro Leu Pro Thr Gly Lys Pro Ala Asn
 290 295 300
 Phe Ser Gly Gly Val Gly Glu Phe Ser Ile Thr Ser Ser Ile Asn Ser
 305 310 315 320
 Lys Glu Val Lys Thr Asn Asp Ala Ile Thr Ile Lys Leu Val Ile Ser
 325 330 335
 Gly Thr Gly Asn Leu Lys Leu Ile Ala Asn Pro Glu Ile Lys Phe Pro
 340 345 350
 Glu Asp Phe Asp Val Tyr Asp Pro Lys Val Asp Ser Lys Val Arg Leu
 355 360 365
 Thr Gln Glu Gly Leu Ser Gly Asn Lys Val Ile Glu Tyr Leu Ala Ile
 370 375 380
 Pro Arg His Ala Gly Val Tyr Lys Ile Pro Gly Val Ser Phe Ser Tyr
 385 390 395 400
 Phe Asp Ile Lys Ser Lys Ser Tyr Lys Thr Leu Asn Thr Glu Asp Tyr
 405 410 415
 Glu Val Lys Val Glu Lys Gly Ala Gly Asn Ala Asp Gln Val Ile Ala
 420 425 430
 Asn Phe Thr Asn Lys Glu Asp Leu Lys Val Leu Gly Glu Asp Ile Arg
 435 440 445
 Tyr Ile Lys Leu Asn Asp Val Lys Leu Gln Pro Lys Asp Asn Leu Leu
 450 455 460
 Phe Gly Ser Leu Leu Tyr Trp Leu Phe Tyr Ile Val Pro Ala Val Val
 465 470 475 480
 Phe Ile Val Phe Phe Ile Val Tyr Arg Lys Gln Ala Ala Glu Asn Ala
 485 490 495
 Asn Val Ala Lys Met Arg Thr Lys Lys Ala Asn Lys Val Ala Thr Lys
 500 505 510
 Arg Met Lys Leu Ala Gly Lys Leu Leu Ala Glu Asn Ser Lys Glu Ala
 515 520 525
 Phe Tyr Asp Glu Val Leu Lys Ala Leu Trp Gly Tyr Ile Ser Asp Lys
 530 535 540
 Leu Asn Ile Pro Val Ser Arg Leu Ser Lys Asp Asn Val Glu Glu Lys
 545 550 555 560
 Leu Arg Asn Tyr Gly Val Ser Asp Glu Leu Ile Lys Asp Phe Leu Asn
 565 570 575
 Thr Leu Asn Glu Cys Glu Phe Ala Arg Phe Ala Pro Gly Asp Glu Ser
 580 585 590
 Gln Ala Met Asp Lys Val Tyr Ser Ser Ser Leu Glu Val Met Ser Lys
 595 600 605
 Met Glu Asn Ser Ile Lys Arg

610

615

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 <211> 93
 <212> PRT
 <213> B.fragilis

<400> 5874

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Lys	Lys	Ala	Met	Ile	Gly	Asn	Asn	Val	Ser	His	Ser	Lys	Arg	Arg	Thr
		20						25					30		
Lys	Arg	Thr	Phe	Asp	Leu	Asn	Leu	Phe	Asn	Lys	Lys	Phe	Tyr	Tyr	Val
		35					40					45			
Glu	Gln	Asp	Cys	Trp	Ile	Ser	Leu	Ser	Leu	Cys	Ala	Ala	Gly	Leu	Arg
	50					55				60					
Ile	Ile	Asn	Lys	Lys	Gly	Leu	Asp	Ala	Ala	Leu	Asn	Asp	Ala	Val	Ala
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Lys	Gly	Tyr	Cys	Asp	Trp	Lys	Thr	Ile	Lys	Val	Val	Gly			
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 <212> PRT
 <213> B.fragilis

<400> 5875

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		20						25					30		
Gln	Gly	Asp	Thr	Val	Ser	Ile	His	Asn	Ala	Glu	Phe	Ser	Gly	Ser	Lys
		35					40					45			
Leu	Glu	Asp	Ala	Thr	Lys	Ala	Glu	Gly	Asp	Ser	Ala	Tyr	Ile	Arg	Asn
	50					55				60					
Asp	Phe	Ala	Ser	Ala	Ile	Gln	Ile	Tyr	Glu	Ser	Leu	Leu	Arg	Lys	Gly
65					70					75					80
Glu	Ser	Ala	Asp	Val	Tyr	Tyr	Asn	Leu	Gly	Asn	Ser	Tyr	Tyr	Lys	Ile
			85						90					95	
Asn	Glu	Ile	Ala	Lys	Ala	Ile	Leu	Asn	Tyr	Glu	Lys	Ala	Leu	Leu	Leu
			100					105					110		
Gln	Pro	Gly	Asn	Gly	Asp	Ile	Arg	Ala	Asn	Leu	Glu	Ile	Ala	Arg	Gly
		115					120					125			
Lys	Thr	Val	Asp	Lys	Val	Glu	Val	Val	Pro	Glu	Ile	Phe	Phe	Val	Thr
	130						135				140				
Trp	Thr	Lys	Ala	Leu	Ile	Asn	Ser	Met	Ser	Val	Asp	Ser	Trp	Ala	Ile
145					150					155					160
Trp	Gly	Ile	Val	Ser	Phe	Leu	Leu	Leu	Ile	Val	Ser	Leu	Tyr	Phe	Phe
			165						170					175	
Ile	Phe	Ser	Lys	Gln	Val	Val	Leu	Lys	Lys	Val	Gly	Phe	Ile	Thr	Gly
		180						185					190		
Ile	Ile	Phe	Leu	Ile	Val	Val	Val	Met	Ala	Asn	Ile	Phe	Ala	Ser	Lys
		195					200					205			
Gln	Lys	Glu	Glu	Leu	Leu	Asn	Arg	Asp	Thr	Ala	Ile	Ile	Met	Ser	Pro
	210					215					220				
Ser	Val	Thr	Val	Arg	Ser	Thr	Pro	Ser	Glu	Asn	Gly	Thr	Ser	Leu	Phe
225					230					235					240
Ile	Leu	His	Glu	Gly	His	Lys	Val	Asn	Ile	Lys	Asp	Asp	Ser	Met	Lys
			245						250					255	

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<400> 5877

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Ile	Glu	Asn	Phe	Ala	Ile	Glu	Met	Pro	Gly	Thr	Glu	Met	Lys	Met	Asp
			260					265					270		
Thr	Ile	Arg	Met	Glu	Tyr	Asp	Ser	Leu	Lys	Ala	Leu	Asn	His	Phe	Ala
		275					280					285			
Asp	Asn	Val	Arg	Phe	Ser	Phe	Arg	Thr	Leu	Pro	Ser	His	Val	Thr	Leu
	290					295					300				
Asn	Asp	Ile	Ser	Ala	Phe	Val	Pro	Ala	Leu	Ser	Asn	Phe	Lys	Glu	Lys
305					310					315					320
Leu	Asp	Leu	Asn	Ile	Asp	Val	Glu	Gly	Thr	Leu	Asn	Gln	Leu	Asn	Cys
				325					330					335	
Arg	Thr	Leu	Glu	Ile	Asn	Ala	Gly	Asp	Lys	Phe	Arg	Leu	Lys	Gly	Asp
			340					345					350		
Val	Ser	Leu	Gln	Asp	Leu	Ser	Arg	Pro	Gln	Asp	Ala	Tyr	Val	Tyr	Gly
		355					360					365			
His	Leu	Ala	Asn	Leu	Ser	Ala	Asn	Lys	Glu	Gly	Ile	Gly	Phe	Leu	Val
	370					375					380				
Arg	Asn	Leu	Ser	Pro	His	Tyr	Asn	Gly	Val	Pro	Pro	Val	Leu	Gln	His
385					390					395					400
Leu	Gly	Asn	Thr	Ser	Phe	His	Gly	Glu	Ile	Ser	Gly	Tyr	Phe	Thr	Asp
				405					410					415	
Leu	Val	Met	Tyr	Gly	Leu	Phe	Arg	Thr	Asp	Ile	Gly	Ser	Val	Gln	Thr
			420					425					430		
Asp	Leu	Lys	Leu	Ser	Ser	Asp	Lys	Ala	Lys	Ala	Leu	Phe	Ser	Tyr	Ser
		435					440					445			
Gly	Gly	Val	Lys	Thr	Thr	Asp	Phe	Glu	Leu	Gly	Gln	Leu	Leu	Gly	Asn
	450					455					460				
Lys	Gln	Leu	Gly	Lys	Ile	Thr	Phe	Asn	Leu	Asp	Val	Arg	Gly	Asn	His
465					470					475					480
Tyr	Lys	Ser	Gln	Tyr	Pro	Ser	Ile	Thr	Leu	Lys	Gly	Leu	Ile	Ala	Ser
				485					490					495	
Leu	Glu	Tyr	Ser	Asn	Tyr	Lys	Tyr	Glu	Asn	Ile	Thr	Leu	Asp	Gly	Glu
			500					505					510		
Phe	Lys	Arg	Gly	Gly	Phe	Asp	Gly	Lys	Val	Ala	Leu	Asn	Asp	Glu	Asn
		515					520					525			
Gly	Ser	Val	His	Leu	Asn	Gly	Asn	Ile	Asn	Val	Val	Glu	Lys	Val	Pro
	530					535					540				
Thr	Phe	Asn	Phe	Asn	Ala	Val	Ile	Asp	Lys	Ile	Arg	Pro	His	Asp	Leu
545					550					555					560
Asn	Leu	Thr	Lys	Glu	Tyr	Pro	Asp	Ala	Glu	Phe	Ser	Leu	Lys	Leu	Lys
				565					570					575	
Ala	Asn	Phe	Arg	Gly	Gly	Ser	Ile	Asp	Glu	Met	Met	Gly	Glu	Ile	Asn
			580					585					590		
Ile	Asp	Ser	Leu	Gln	Phe	Thr	Ala	Pro	Glu	Lys	Ser	Tyr	Phe	Leu	Asp

Gln Tyr Gln Asn Thr Phe Ile Glu Ser Gly Leu Val Leu Cys Glu Asn
 725 730 735
 Pro Thr Asp Gln Phe Lys Ala Lys Val Arg Phe Asn Asn Leu Lys Lys
 740 745 750
 Glu Ser Ala Val Ser Ile Ser Leu Asp Ala Gln Ala Lys Asn Asp Thr
 755 760 765
 Ile Asn Ala Asn Ile Asn Trp Gly Asn Asn Ala Ile Ser Thr Tyr Ser
 770 775 780
 Gly Arg Leu Ser Ala Ala Ala Ser Phe Phe Arg Ala Ala Glu Glu Lys
 785 790 795 800
 Ser Pro Leu Lys Thr Val Val Asp Ile Lys Gln Thr Asp Ile Ile Leu
 805 810 815
 Asn Asp Thr Leu Trp Gln Val His Pro Ser Gln Val Val Val Asp Ser
 820 825 830
 Gly Lys Ile Asp Val Asn Asp Phe Tyr Phe Ser His Gln Asp Arg His
 835 840 845
 Ile Arg Ile Asn Gly Arg Ile Ser Glu Gln Ala Lys Asp Thr Leu Lys
 850 855 860
 Val Glu Leu Lys Asp Ile Asn Val Gly Tyr Val Phe Asp Val Val Asn
 865 870 875 880
 Phe Asp Asp Val Asp Phe Lys Gly Asp Ala Thr Gly Thr Ala Tyr Ala
 885 890 895
 Ser Gly Ile Leu Lys Glu Pro Val Met Asn Thr Arg Leu His Phe Lys
 900 905 910
 Asn Phe Thr Phe Asn Asp Ala Ser Leu Gly Ala Met Asp Ile Tyr Gly
 915 920 925
 Ala Trp Lys Asn Asp Met Arg Ala Ile Phe Leu Asp Ala His Met Glu
 930 935 940
 Glu Glu Gly Val Ser Lys Thr His Val Ile Gly His Val Tyr Pro Leu
 945 950 955 960
 Lys Pro Glu Ser Lys Leu Asp Leu Asn Ile Glu Thr Asp His Thr Asn
 965 970 975
 Ile Gln Phe Leu Gln Tyr Phe Met Arg Ser Ile Val Glu Asp Leu His
 980 985 990
 Gly Arg Thr Ser Gly Lys Ala His Phe Tyr Gly Lys Phe Lys Ala Leu
 995 1000 1005
 Asn Ile Glu Gly Asn Leu Met Thr Asp Ala Ser Leu Lys Ile Gly Ile
 1010 1015 1020
 Leu Asn Thr Ser Phe Thr Val Thr Asp Thr Ile Arg Leu Ser Thr Ser
 1025 1030 1035 1040
 Gly Ile Ser Phe Asp Asn Ile Arg Ile Ala Asp Met Glu Gly His Gln
 1045 1050 1055
 Gly Thr Met Asn Gly Lys Leu Asn Phe Arg His Phe Arg Asp Leu Ser
 1060 1065 1070
 Tyr His Phe Glu Phe Asn Val Asn Asn Met Leu Leu Met Asn Thr Lys
 1075 1080 1085
 Glu Asn Pro Asp Ile Asn Phe Tyr Gly Lys Val Tyr Gly Thr Gly Asn
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 Ala Met Leu Ile Gly Asn Pro Gln Glu Leu Gln Val Asn Ala Ala Val
 1105 1110 1115 1120
 Thr Thr Asn Arg Asn Thr Asn Phe Val
 1125

<210> 5878

<211> 492

<212> PRT

<213> B.fragilis

<400> 5878

Lys Ile Ser Leu Lys Lys His Phe Arg Met Asn Glu Lys Leu Thr Ile
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 Asp Ala Asp Val Phe Val Arg Glu Phe Phe Leu Leu Ile Glu Gln Ala
 35 40 45
 Leu Asp Ala Asp Gln Tyr Val Lys Ile Lys Gly Leu Gly Thr Phe Lys
 50 55 60
 Leu Ile Gly Val Asn Ser Arg Glu Ser Val Asn Val Asn Thr Gly Glu
 65 70 75 80
 Arg Ile Lys Ile Glu Gly His Thr Lys Ile Ser Phe Thr Pro Asp Pro
 85 90 95
 Ser Leu Arg Asp Ile Ile Asn Arg Pro Phe Ser His Phe Glu Thr Val
 100 105 110
 Val Leu Asn Glu Asn Thr Val Leu Glu Asp Thr Pro Ile Glu Glu Leu
 115 120 125
 Glu Glu Glu Ser Gly Asn Ile Ser Glu Thr Thr Glu Leu Pro Leu Ile
 130 135 140
 Thr Glu Thr Val Glu Arg Glu Glu Ala Lys Ala Glu Glu Lys Val Val
 145 150 155 160
 Glu Thr Glu Ala Asn Gly Lys Val Glu Pro Glu Thr Ser Lys Gly Gln
 165 170 175
 Asp Val Val Ser Ser Asp Val Glu Val Ala Glu Asp Val Ser Glu Val
 180 185 190
 Met Lys Glu Ser Glu Arg Thr Glu Val Val Asp Asp Ile Asp Ile Leu
 195 200 205
 Glu Thr Val Glu Asp Val Ser Ile His Lys Gly Ser Glu Ala Val Val
 210 215 220
 Glu Gly Ser Ser Ile Ala Glu Val Arg Glu Glu Gly Gly Leu Asp Lys
 225 230 235 240
 Val Val Glu Asn Ser Glu Glu Pro Ile Gln Val Thr Gly Asp Thr Gly
 245 250 255
 Gln Glu Thr Thr Asp Asn Leu Lys Lys Val Ile Glu Asp Glu Gly Ser
 260 265 270
 Pro Lys Leu Thr Ala Glu Glu Ile Ile Ala Arg Glu Ile Gln Lys Ala
 275 280 285
 Glu Val Ser Thr Ile Pro Val Lys Lys Glu Lys Arg Pro Lys Lys Glu
 290 295 300
 Val Lys Pro Glu Asn Gln Lys Ser Pro Val Pro Tyr Leu Ile Val Ile
 305 310 315 320
 Ile Val Val Val Met Ser Leu Cys Gly Ala Ala Leu Val Phe Ile Tyr
 325 330 335
 Tyr Pro Asp Leu Phe Ser Lys Lys Glu Ser Glu Gln Ser Ile Thr Thr
 340 345 350
 Glu Thr Val Glu Lys Lys Glu Pro Ile Arg Glu Ile Pro Leu Asp Thr
 355 360 365
 Val Ala Lys Ala Asp Thr Ile Val Lys Val Val Ala Lys Thr Pro Asn
 370 375 380
 Gln Gln Glu Ile Lys Gln Met Ser Glu Arg Val Asn Val Ser Glu Lys
 385 390 395 400
 Val Asp Lys Thr Ser Glu Ser Glu Ser Val Ser Arg Glu Lys Ser Thr
 405 410 415
 Lys Thr Val Ala Ile Pro Val Lys Pro Asp Ser Val Asn Tyr Thr Ile
 420 425 430
 Thr Gly Thr Lys Ala Thr Tyr Thr Ile Lys Glu Gly Glu Thr Leu Thr
 435 440 445
 Arg Val Ser Leu Arg Phe Tyr Gly Thr Lys Asp Leu Trp Pro Tyr Ile
 450 455 460
 Val Lys His Asn Arg Gly Val Ile Lys Asn Pro Asn Asn Val Pro Tyr

465 470 475 480
 Gly Thr Val Leu Lys Ile Pro Glu Leu Val Lys Lys
 485 490

<210> 5879
 <211> 847
 <212> PRT
 <213> B.fragilis

<400> 5879
 Arg Arg Leu Leu Glu Gln Asp Arg Ile Ile Lys Ile Asn Ile Glu Glu
 1 5 10 15
 Glu Met Lys Ser Ser Tyr Ile Asp Tyr Ser Met Ser Val Ile Val Ser
 20 25 30
 Arg Ala Leu Pro Asp Val Arg Asp Gly Phe Lys Pro Val His Arg Arg
 35 40 45
 Ile Leu Tyr Gly Met Met Glu Leu Gly Asn Thr Ser Asp Lys Pro Tyr
 50 55 60
 Lys Lys Ser Ala Arg Ile Val Gly Glu Val Leu Gly Lys Tyr His Pro
 65 70 75 80
 His Gly Asp Ser Ser Val Tyr Phe Ala Met Val Arg Met Ala Gln Glu
 85 90 95
 Trp Ala Met Arg Tyr Pro Leu Val Asp Gly Gln Gly Asn Phe Gly Ser
 100 105 110
 Val Asp Gly Asp Ser Pro Ala Ala Met Arg Tyr Thr Glu Ala Arg Leu
 115 120 125
 Asn Lys Leu Gly Glu Glu Met Met Gln Asp Leu Tyr Lys Glu Thr Val
 130 135 140
 Asp Phe Glu Pro Asn Phe Asp Asn Thr Leu Met Glu Pro Lys Val Met
 145 150 155 160
 Pro Thr Arg Ile Pro Asn Leu Leu Val Asn Gly Ala Ser Gly Ile Ala
 165 170 175
 Val Gly Met Ala Thr Asn Met Pro Pro His Asn Leu Ser Glu Val Ile
 180 185 190
 Asp Ala Cys Glu Ala Tyr Leu Asp Asn Lys Asp Val Thr Val Glu Glu
 195 200 205
 Leu Met Glu Tyr Val Lys Ala Pro Asp Phe Pro Thr Gly Gly Tyr Ile
 210 215 220
 Tyr Gly Ile Ser Gly Val Arg Glu Ala Tyr Leu Thr Gly Arg Gly Arg
 225 230 235 240
 Val Val Met Arg Ala Lys Ala Glu Ile Glu Ser Gly Gln Thr His Asp
 245 250 255
 Lys Ile Val Val Thr Glu Ile Pro Tyr Asn Val Asn Lys Ala Glu Leu
 260 265 270
 Ile Lys Ala Ile Ala Asp Leu Val Asn Glu Lys Arg Ile Glu Gly Ile
 275 280 285
 Ser Asn Ala Asn Asp Glu Ser Asp Arg Glu Gly Met Arg Ile Val Ile
 290 295 300
 Asp Ile Lys Arg Asp Ala Asn Ala Ser Val Val Leu Asn Lys Leu Tyr
 305 310 315 320
 Lys Met Thr Ala Leu Gln Thr Ser Phe Gly Val Asn Asn Val Ala Leu
 325 330 335
 Val Asn Gly Arg Pro Lys Met Leu Asn Leu Arg Asp Leu Ile Val Tyr
 340 345 350
 Phe Val Glu His Arg His Asp Val Val Ile Arg Arg Thr Gln Phe Asp
 355 360 365
 Leu Arg Lys Ala Lys Glu Arg Ala His Ile Leu Glu Gly Leu Ile Ile
 370 375 380
 Ala Ser Asp Asn Ile Asp Glu Val Ile Arg Ile Ile Arg Ala Ala Lys

385		390		395		400									
Thr	Pro	Asn	Asp	Ala	Ile	Ser	Gly	Leu	Met	Glu	Arg	Phe	Asn	Leu	Ser
				405					410					415	
Glu	Ile	Gln	Ala	Arg	Ala	Ile	Val	Glu	Met	Arg	Leu	Arg	Gln	Leu	Thr
			420						425				430		
Gly	Leu	Met	Gln	Asp	Gln	Leu	His	Ala	Glu	Tyr	Glu	Glu	Val	Met	Lys
		435				440					445				
Gln	Ile	Ala	Tyr	Leu	Glu	Ser	Ile	Leu	Ala	Asp	Asp	Glu	Val	Cys	Arg
	450				455					460					
Lys	Val	Ile	Lys	Asp	Glu	Leu	Leu	Glu	Val	Arg	Ala	Lys	Tyr	Gly	Asp
465				470					475						480
Glu	Arg	Arg	Ser	Glu	Ile	Val	Tyr	Ser	Ser	Glu	Glu	Phe	Asn	Pro	Glu
			485					490						495	
Asp	Phe	Tyr	Ala	Asp	Asp	Gln	Met	Ile	Ile	Thr	Ile	Ser	His	Met	Gly
		500					505						510		
Tyr	Ile	Lys	Arg	Thr	Pro	Leu	Thr	Glu	Phe	Arg	Ala	Gln	Asn	Arg	Gly
	515					520					525				
Gly	Val	Gly	Ser	Lys	Gly	Thr	Glu	Thr	Arg	Asp	Glu	Asp	Phe	Val	Glu
530					535					540					
His	Ile	Tyr	Pro	Ala	Thr	Met	His	Asn	Thr	Met	Met	Phe	Phe	Thr	Gln
545				550					555						560
Lys	Gly	Lys	Cys	Tyr	Trp	Leu	Lys	Val	Tyr	Glu	Ile	Pro	Glu	Gly	Thr
			565					570						575	
Lys	Asn	Ser	Lys	Gly	Arg	Ala	Ile	Gln	Asn	Leu	Leu	Asn	Ile	Asp	Ser
		580						585				590			
Asp	Asp	Ala	Val	Asn	Ala	Tyr	Leu	Arg	Val	Lys	Ser	Leu	Asn	Asp	Gln
		595				600						605			
Glu	Tyr	Ile	Asn	Ser	His	Tyr	Val	Leu	Phe	Cys	Thr	Lys	Asn	Gly	Val
	610				615						620				
Ile	Lys	Lys	Thr	Ser	Leu	Glu	Gln	Tyr	Ser	Arg	Pro	Arg	Gln	Asn	Gly
625				630					635						640
Val	Asn	Ala	Ile	Thr	Ile	Arg	Glu	Asp	Asp	Arg	Val	Ile	Glu	Val	Arg
			645					650						655	
Met	Thr	Asn	Gly	Asn	Asn	Glu	Ile	Ile	Ile	Ala	Asn	Arg	Asn	Gly	Arg
		660					665					670			
Ala	Ile	Arg	Phe	His	Glu	Ala	Ala	Val	Arg	Val	Met	Gly	Arg	Thr	Ala
		675				680						685			
Thr	Gly	Val	Arg	Gly	Ile	Thr	Leu	Asp	Asp	Asp	Gly	Gln	Asp	Glu	Val
	690				695						700				
Ile	Gly	Met	Ile	Cys	Ile	Lys	Asp	Leu	Glu	Thr	Glu	Ser	Val	Met	Val
705				710					715						720
Val	Ser	Glu	Gln	Gly	Tyr	Gly	Lys	Arg	Ser	Asp	Ile	Glu	Asp	Tyr	Arg
			725					730						735	
Lys	Thr	Asn	Arg	Gly	Gly	Lys	Gly	Val	Lys	Thr	Met	Asn	Ile	Thr	Glu
		740						745					750		
Lys	Thr	Gly	Lys	Leu	Val	Thr	Ile	Lys	Ser	Val	Thr	Asp	Glu	Asn	Asp
		755				760						765			
Leu	Met	Ile	Ile	Asn	Lys	Ser	Gly	Ile	Thr	Ile	Arg	Leu	Lys	Val	Ala
	770				775						780				
Asp	Val	Arg	Ile	Met	Gly	Arg	Ala	Thr	Gln	Gly	Val	Arg	Leu	Ile	Asn
785				790					795						800
Leu	Glu	Lys	Arg	Asn	Asp	Gln	Ile	Gly	Ser	Val	Cys	Lys	Val	Thr	Ser
			805					810						815	
Glu	Ser	Leu	Glu	Asp	Glu	Val	Pro	Glu	Glu	Arg	Glu	Gly	Asn	Ile	
		820						825				830			
Pro	Ser	Asp	Pro	Glu	Thr	Asn	Thr	Pro	Val	Asn	Glu	Thr	Glu	Glu	
		835					840					845			

<211> 331
 <212> PRT
 <213> B.fragilis

<400> 5880

Ile	Ile	Asn	Arg	Met	Val	Phe	Ala	Asn	Ile	Glu	Tyr	Leu	Phe	Leu	Leu
1				5					10					15	
Leu	Leu	Leu	Val	Pro	Tyr	Ile	Val	Trp	Tyr	Ile	Met	Lys	Arg	Lys	Lys
			20					25					30		
Thr	Glu	Pro	Thr	Leu	Gln	Ile	Ser	Asp	Ala	Arg	Val	Tyr	Ala	His	Ala
		35					40					45			
Pro	Lys	Ser	Tyr	Lys	Asn	Tyr	Leu	Leu	His	Val	Pro	Phe	Gly	Leu	Arg
	50					55					60				
Ile	Ile	Thr	Leu	Ile	Leu	Ile	Ile	Leu	Val	Leu	Ala	Arg	Pro	Gln	Thr
65					70					75				80	
Thr	Asn	Ser	Trp	Gln	Asn	Ser	Glu	Ile	Glu	Gly	Ile	Asp	Ile	Met	Leu
				85					90					95	
Ala	Ile	Asp	Val	Ser	Thr	Ser	Met	Leu	Ala	Glu	Asp	Leu	Lys	Pro	Asn
			100					105					110		
Arg	Leu	Glu	Ala	Ala	Lys	Asp	Val	Ala	Ala	Glu	Phe	Ile	Asn	Gly	Arg
		115					120					125			
Pro	Asn	Asp	Asn	Ile	Gly	Ile	Thr	Leu	Phe	Ala	Gly	Glu	Ser	Phe	Thr
	130				135						140				
Gln	Cys	Pro	Leu	Thr	Val	Asp	His	Ala	Val	Leu	Leu	Asn	Leu	Phe	Gln
145					150					155					160
Gly	Ile	Gln	Cys	Asp	Ile	Ile	Glu	Asp	Gly	Thr	Ala	Val	Gly	Met	Gly
				165					170					175	
Ile	Ala	Asn	Ala	Val	Thr	Arg	Leu	Lys	Asp	Ser	Lys	Ala	Lys	Ser	Lys
			180					185					190		
Val	Ile	Ile	Leu	Leu	Thr	Asp	Gly	Thr	Asn	Asn	Lys	Gly	Asp	Ile	Ser
		195					200					205			
Pro	Leu	Thr	Ala	Ala	Glu	Ile	Ala	Lys	Ser	Phe	Gly	Ile	Arg	Val	Tyr
	210					215					220				
Thr	Ile	Gly	Val	Gly	Thr	Asn	Gly	Met	Ala	Pro	Tyr	Pro	Val	Arg	Val
225					230					235				240	
Gly	Gly	Thr	Thr	Gln	Tyr	Ile	Asn	Thr	Pro	Val	Glu	Ile	Asp	Glu	Lys
				245					250					255	
Thr	Leu	Thr	Gln	Ile	Ala	Gly	Thr	Thr	Asp	Gly	Asn	Tyr	Phe	Arg	Ala
			260					265					270		
Thr	Ser	Asn	Ser	Lys	Leu	Lys	Glu	Val	Tyr	Glu	Glu	Ile	Asp	Lys	Leu
		275					280					285			
Glu	Lys	Thr	Lys	Leu	Asn	Val	Lys	Glu	Tyr	Ser	Lys	Arg	Gln	Glu	Glu
	290					295					300				
Tyr	Arg	Trp	Phe	Ala	Leu	Ala	Ala	Phe	Leu	Cys	Ile	Leu	Leu	Glu	Val
305					310					315					320
Leu	Leu	Arg	Asn	Ser	Ile	Leu	Lys	Lys	Ile	Pro					
				325						330					

<210> 5881
 <211> 289
 <212> PRT
 <213> B.fragilis

<400> 5881

Met	Glu	Thr	Ser	Glu	Ile	Leu	Lys	Lys	Val	Arg	Arg	Ile	Glu	Ile	Lys
1				5					10					15	
Thr	Arg	Gly	Leu	Ser	Asn	Asn	Ile	Phe	Ala	Gly	Gln	Tyr	His	Ser	Ala
			20					25					30		
Phe	Lys	Gly	Arg	Gly	Met	Ala	Phe	Ser	Glu	Val	Arg	Glu	Tyr	Gln	Phe

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<210> 5882
<211> 454
<212> PRT
<213> B.fragilis
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<400> 5882															
Gly	Tyr	Gly	Arg	Pro	Thr	Gly	Val	Pro	Gln	Glu	Arg	Ile	Cys	Arg	Leu
1				5					10					15	
Leu	Ile	Trp	Arg	Glu	Cys	Met	Lys	Arg	Lys	Thr	Ile	Asp	Ile	Ile	Thr
			20					25					30		
Leu	Gly	Cys	Ser	Lys	Asn	Leu	Val	Asp	Ser	Glu	Gln	Leu	Met	Arg	Gln
		35					40					45			
Leu	Glu	Glu	Ala	Gly	Tyr	Asp	Val	Thr	His	Asp	Ser	Glu	Lys	Pro	Thr
	50					55					60				
Gly	Glu	Ile	Ala	Val	Ile	Asn	Thr	Cys	Gly	Phe	Ile	Gly	Asp	Ala	Lys
65					70					75					80
Glu	Glu	Ser	Ile	Asn	Met	Ile	Leu	Glu	Phe	Ala	Gln	Glu	Lys	Glu	Glu
				85					90					95	
Gly	Asn	Leu	Glu	Lys	Leu	Phe	Val	Met	Gly	Cys	Leu	Ser	Glu	Arg	Tyr
			100					105					110		
Leu	Lys	Glu	Leu	Ala	Ile	Glu	Ile	Pro	Gln	Val	Asp	Lys	Phe	Tyr	Gly
		115					120					125			
Lys	Phe	Asn	Trp	Lys	Gly	Leu	Leu	Gln	Asp	Leu	Gly	Lys	Ala	Tyr	His
	130					135					140				
Glu	Glu	Leu	His	Ile	Glu	Arg	Thr	Leu	Thr	Thr	Pro	Lys	His	Tyr	Ala

145 150 155 160
 Tyr Leu Lys Ile Ser Glu Gly Cys Asp Arg Lys Cys Ser Tyr Cys Ala
 165 170 175
 Ile Pro Ile Ile Thr Gly Arg His Val Ser Arg Pro Ile Glu Glu Ile
 180 185 190
 Leu Asp Glu Val Arg Tyr Leu Val Ser Asn Gly Val Lys Glu Phe Gln
 195 200 205
 Val Ile Ala Gln Glu Leu Thr Tyr Tyr Gly Val Asp Leu Tyr Lys Lys
 210 215 220
 Gln Met Leu Pro Glu Leu Ile Glu Arg Ile Ser Glu Ile Pro Gly Val
 225 230 235 240
 Glu Trp Ile Arg Leu His Tyr Ala Tyr Pro Ala His Phe Pro Glu Glu
 245 250 255
 Leu Phe Arg Val Met Arg Glu Arg Asp Asn Val Cys Lys Tyr Met Asp
 260 265 270
 Ile Ala Leu Gln His Ile Ser Asp Asn Met Leu Gln Arg Met Arg Arg
 275 280 285
 His Val Thr Lys Lys Glu Thr Tyr Arg Leu Ile Glu Gln Phe Arg Lys
 290 295 300
 Glu Val Pro Gly Ile His Leu Arg Thr Thr Leu Met Val Gly His Pro
 305 310 315 320
 Gly Glu Thr Glu Glu Asp Phe Glu Glu Leu Lys Glu Phe Val Arg Lys
 325 330 335
 Val Arg Phe Asp Arg Met Gly Ala Phe Thr Tyr Ser Glu Glu Glu Gly
 340 345 350
 Thr Tyr Ala Ala Ala Asn Tyr Glu Asp Ser Ile Pro Gln Glu Leu Lys
 355 360 365
 Gln Ala Arg Leu Asp Glu Leu Met Ala Ile Gln Gln Gly Ile Ser Thr
 370 375 380
 Glu Leu Ser Ala Ser Lys Val Gly Gln Lys Met Lys Val Ile Ile Asp
 385 390 395 400
 Arg Ile Glu Gly Glu Tyr Tyr Ile Gly Arg Thr Glu Phe Asp Ser Pro
 405 410 415
 Glu Val Asp Pro Glu Val Leu Ile Arg Cys Glu Gly Asp Asn Leu Met
 420 425 430
 Ile Gly Asn Phe Tyr Gln Val Gln Val Ile Asp Ser Asp Glu Phe Asp
 435 440 445
 Leu Phe Gly Glu Ile Ile
 450

<210> 5883

<211> 415

<212> PRT

<213> B.fragilis

<400> 5883

Leu Cys Lys Ser Pro Met Phe Ala Glu Ile Ile Thr Ile Gly Asp Glu
 1 5 10 15
 Leu Leu Ile Gly Gln Val Thr Asp Thr Asn Ser Ala Trp Met Gly Arg
 20 25 30
 Glu Leu Asn Lys Val Gly Ile Glu Val Ile Arg Val Val Ser Val Arg
 35 40 45
 Asp Arg Ala Asp Glu Ile Ile Glu Ala Val Asp Ala Ser Met Lys Arg
 50 55 60
 Ala Asn Ile Val Leu Val Thr Gly Gly Leu Gly Pro Thr Lys Asp Asp
 65 70 75 80
 Ile Thr Lys Gln Thr Leu Cys Lys Tyr Phe Gly Thr Arg Leu Ile Phe
 85 90 95
 Ser Glu Ala Val Phe Glu Asn Val Lys Arg Val Leu Ala Gly Lys Ile

100	105	110
Pro Met Asn Ala Leu Asn Lys Ser Gln Ala Met Val	Pro Glu Asp Cys	
115	120	125
Ile Val Ile Asn Asn Arg Val Gly Ser Ala Ser Val	Ser Trp Phe Glu	
130	135	140
Lys Asp Gly Lys Val Leu Val Ser Met Pro Gly Val	Pro Gln Glu Met	
145	150	155
Thr Thr Val Met Ser Glu Glu Val Ile Pro Arg Leu Cys Ala Lys Phe		160
165	170	175
Arg Thr Gly Ala Ile Ile His Arg Thr Phe Thr Val Gln Asn Tyr Pro		190
180	185	195
Glu Ser Val Leu Ala Glu Lys Leu Glu Ser Trp Glu Met Ala Leu Pro		205
210	215	220
Ala Cys Leu Lys Leu Ala Tyr Leu Pro Lys Pro Gly Leu Ile Arg Leu		235
225	230	240
Arg Leu Thr Gly Arg Gly Gln Asn Arg Ser Glu Ile Glu Ala Cys Val		255
245	250	255
Asn Thr Glu Ser Ala Lys Leu Glu Ala Ile Leu Gly Glu Asp Ile Leu		270
260	265	275
Asp Glu Glu Asp Thr Pro Ile Glu Ile Leu Ile Gly Glu Leu Leu Lys		285
275	280	285
Lys Lys Asn Leu Thr Leu Ser Thr Ala Glu Ser Cys Thr Gly Gly Ser		300
290	295	305
Ile Ala Ala Arg Ile Thr Ser Val Ala Gly Ser Ser Glu Tyr Phe Lys		315
310	315	320
Gly Ser Ile Val Ala Tyr Ala Asn Glu Val Lys Thr Glu Leu Leu Ser		335
325	330	340
Val Ser Met Glu Thr Leu Glu Lys Arg Gly Ala Val Ser Glu Glu Thr		350
340	345	355
Val Ile Glu Met Val Lys Gly Ala Met Lys Ala Leu Lys Thr Asp Cys		365
355	360	370
Ala Val Ala Thr Ser Gly Ile Ala Gly Pro Ser Gly Gly Thr Glu Glu		380
370	375	385
Lys Pro Val Gly Thr Val Trp Ile Ala Ala Ala Tyr Lys Ser Glu Ile		400
385	390	405
Cys Thr Met Lys Gln Glu Thr Asn Arg Gly Arg Glu Met Asn Val Glu		415
405	410	
Arg Ala Ser Asn Asn Ala Leu Leu Leu Leu Arg Lys Leu Val Lys		

<210> 5884

<211> 334

<212> PRT

<213> B.fragilis

<400> 5884

Leu Val Phe Met Ala Glu Ser Ile Asp Ile Arg Glu Leu Asn Glu Arg	
1	15
Ile Glu Arg Gln Ser Ala Phe Val Thr Asn Leu Thr Thr Gly Met Asp	
20	30
Gln Ile Ile Val Gly Gln Lys His Leu Val Glu Ser Leu Leu Ile Gly	
35	45
Leu Leu Ser Asp Gly His Val Leu Leu Glu Gly Val Pro Gly Leu Ala	
50	60
Lys Thr Leu Ala Ile Lys Thr Leu Ala Ser Leu Ile Asp Ala Lys Tyr	
65	80
Ser Arg Ile Gln Phe Thr Pro Asp Leu Leu Pro Ala Asp Val Val Gly	
85	95
Thr Met Val Tyr Ser Gln Lys Asp Glu Ser Phe Gln Val Lys Lys Gly	

100	105	110
Pro Ile Phe Ala Asn Phe Val	Leu Ala Asp Glu Ile Asn Arg Ala Pro	
115	120	125
Ala Lys Val Gln Ser Ala Leu	Leu Glu Ala Met Gln Glu Arg Gln Val	
130	135	140
Thr Ile Gly Lys Glu Thr Phe	Leu Leu Pro Glu Pro Phe Leu Val Leu	
145	150	155
Ala Thr Gln Asn Pro Ile Glu	Gln Glu Gly Thr Tyr Pro Leu Pro Glu	
165	170	175
Ala Gln Val Asp Arg Phe Met	Leu Lys Val Ile Ile Asp Tyr Pro Lys	
180	185	190
Gln Glu Glu Glu Lys Leu Ile	Ile Arg Gln Asn Ile Asn Gly Glu Lys	
195	200	205
Phe Asn Val Lys Pro Ile Leu	Lys Ala Glu Glu Ile Ile Glu Ala Arg	
210	215	220
Lys Val Val Arg Gln Val Tyr	Leu Asp Glu Lys Ile Glu Arg Tyr Ile	
225	230	235
Val Asp Ile Val Phe Ala Thr	Arg Tyr Pro Glu Lys Tyr Asp Leu Lys	
245	250	255
Glu Leu Lys Asp Met Ile Gly	Phe Gly Gly Ser Pro Arg Ala Ser Ile	
260	265	270
Asn Leu Ala Leu Ala Ala Arg	Thr Tyr Ala Phe Ile Lys Arg Arg Gly	
275	280	285
Tyr Val Ile Pro Glu Asp Val	Arg Ala Val Ala His Asp Val Leu Arg	
290	295	300
His Arg Ile Gly Leu Thr Tyr	Glu Ala Glu Ala Ser Asn Val Thr Ser	
305	310	315
Asp Glu Ile Val Ser Lys Ile	Leu Asn Lys Val Glu Val Pro	
325	330	

<210> 5885

<211> 418

<212> PRT

<213> B.fragilis

<400> 5885

Asn Arg Arg Ile Asp Ile Ile	Leu Ile Ile Asn Gln Thr Thr Ile Met
1	5 10 15
Lys Arg Val Leu Phe Ser Met	Val Leu Met Ala Val Ser Phe Ala
20	25 30
Phe Ala Gln Glu Lys Asn Val	Lys Glu Ala Lys Ser Ile Ala Gly Glu
35	40 45
Val Lys Pro Asp Phe Ala Lys	Ala Glu Gln Leu Ile Asn Glu Ala Leu
50	55 60
Thr Asn Pro Glu Thr Lys Asp	Asn Ala Ala Thr Trp Asp Val Ala Gly
65	70 75 80
Tyr Ile Gln Lys Arg Ile Asn	Glu Lys Glu Met Glu Asn Ala Tyr Leu
85	90 95
Arg Lys Pro Tyr Asp Thr Leu	Lys Val Tyr Asn Ser Val Leu Asn Met
100	105 110
Tyr Asn Tyr Tyr Val Lys Cys	Asp Glu Leu Ala Gln Ile Pro Asn Glu
115	120 125
Lys Gly Lys Ile Lys Asn Lys	Tyr Arg Ser Ala Asn Ser Lys Thr Ile
130	135 140
Leu Ala Glu Arg Pro Asn Leu	Ile Asn Gly Gly Ile Gln Tyr Phe Asn
145	150 155 160
Leu Asn Lys Asn Glu Asp Ala	Leu Lys Tyr Phe Ala Ala Tyr Val Asp
165	170 175
Ala Ala Thr Leu Pro Met Met	Glu Lys Glu Asn Leu Leu Glu Lys Asp

180	185	190
Thr Ile Leu Pro Gln Val Ala Tyr Tyr Ala Thr Leu Ala Ala Asp Arg		
195	200	205
Val Gly Asp Lys Asp Ala Val Met Lys Tyr Ala Gln Tyr Ala Leu Lys		
210	215	220
Asp Lys Glu Asn Gly Gln Phe Ala Met Gln Leu Leu Thr Asp Ala Tyr		
225	230	235
Lys Ala Lys Gly Asp Thr Ala Lys Trp Val Glu Lys Leu Gln Glu Gly		
245	250	255
Ile Val Lys Phe Pro Glu Asn Gln Tyr Phe Phe Ala Asn Leu Val Asp		
260	265	270
Tyr Tyr Ser Ser Ser Asn Gln Asn Asp Lys Ala Met Gln Phe Ala Asp		
275	280	285
Asp Met Leu Ala Lys Asp Pro Asn Asn Lys Leu Tyr Leu Tyr Val Lys		
290	295	300
Ala Tyr Leu Tyr His Asn Met Lys Asp Tyr Glu Lys Ala Ile Glu Phe		
305	310	315
Tyr Lys Lys Thr Leu Asp Ile Asp Pro Ala Tyr Ala Glu Ala Cys Ser		
325	330	335
Asn Leu Gly Leu Val Tyr Leu Leu Gln Ala Gln Glu Tyr Ala Asp Lys		
340	345	350
Ala Pro Ala Asp Ile Asn Asp Pro Asn Tyr Ala Thr Ala Gln Ala Glu		
355	360	365
Ile Lys Lys Phe Tyr Glu Ala Ala Lys Pro Tyr Tyr Glu Lys Ala Arg		
370	375	380
Glu Leu Lys Pro Asp Gln Lys Asp Leu Trp Leu Gln Gly Leu Tyr Arg		
385	390	395
Val Tyr Tyr Asn Leu Asn Met Gly Pro Glu Phe Glu Glu Ile Glu Lys		
405	410	415
Met Met		

<210> 5886
 <211> 100
 <212> PRT
 <213> B.fragilis

<400> 5886
Asn Cys Arg Ile Leu Asn Asn Lys Glu Phe Thr Ser Glu Leu Ser Arg
1 5 10 15
Arg Leu Gly Tyr Asn Thr Lys Tyr Thr Ser Glu Leu Ile Thr Ser Leu
20 25 30
Leu Ser Asp Ile Thr Gln Glu Leu Gln Glu Ser Asn Ala Ile Gly Ile
35 40 45
Gln Gly Phe Gly Thr Phe Glu Val Lys Lys Lys Ala Glu Arg Ile Val
50 55 60
Ile Asn Pro Val Thr Lys Leu Arg Leu Leu Val Pro Pro Lys Leu Val
65 70 75 80
Leu Ala Phe Lys Pro Ser Pro Ile Leu Lys Asp Lys Phe Lys Glu Thr
85 90 95
Phe Pro Tyr Glu
100

<210> 5887
 <211> 146
 <212> PRT
 <213> B.fragilis

<400> 5887

Leu Pro Met Val Lys Ile Met Lys Gly Gly Ala Val Glu Ala Gly Lys
 1 5 10 15
 Lys Ala Ala Lys Lys Gly Ile Gln Val Asn Val Leu Gly Val Gly Leu
 20 25 30
 Pro Asp Gly Ala Pro Ile Pro Ile Glu Gly Ser Asn Asp Phe Arg Arg
 35 40 45
 Asp Arg Glu Gly Asn Val Ile Val Thr Arg Leu Asn Glu Ala Met Cys
 50 55 60
 Gln Glu Ile Ala Lys Glu Gly Asn Gly Ile Tyr Val Arg Val Asp Asn
 65 70 75 80
 Ser Asn Ser Ala Gln Lys Ala Ile Asn Gln Glu Ile Asn Lys Met Ala
 85 90 95
 Lys Ser Asp Val Glu Ser Lys Val Tyr Thr Asp Tyr Asn Glu Gln Phe
 100 105 110
 Gln Val Ile Ala Trp Met Ile Leu Leu Leu Leu Val Glu Met Leu
 115 120 125
 Ile Leu Asp Arg Lys Asn Pro Leu Phe Lys Asn Ile Arg Leu Phe Ser
 130 135 140
 Asn Lys
 145

<210> 5888

<211> 71

<212> PRT

<213> B.fragilis

<400> 5888

Ser Phe Leu Ser Ser Lys Gln Asp Ala Lys Ile Leu Lys Met Gly Glu
 1 5 10 15
 Leu Cys Ser Phe Phe Ile Tyr Asn Phe Lys Arg Gly His Thr Lys Val
 20 25 30
 Ile Tyr Lys Ser Ala Gly Leu Trp Ile Asp Asn Arg Pro Val Tyr Gly
 35 40 45
 Phe Ser Lys Asp Lys Arg Ser Pro Phe Pro Ala Leu Leu Phe Gln Arg
 50 55 60
 Glu Pro Tyr Ile Leu Glu Asn
 65 70

<210> 5889

<211> 516

<212> PRT

<213> B.fragilis

<400> 5889

Thr Asn Leu Pro Pro Arg Leu Leu Gln Gly Leu Ile Asn Leu Asn Arg
 1 5 10 15
 Asn Arg Arg Met Glu Lys Lys Lys Ile Pro Val Ala Leu Met Ile Ala
 20 25 30
 Ala Gly Met Leu Leu Tyr Asn Asn Thr Val Ala Ala Gln Ser Leu Pro
 35 40 45
 Pro Thr Gln Glu Thr Ser Gln His Gln Leu Ser Phe Asn Glu Ala Leu
 50 55 60
 Gln Leu Leu His Lys Gly Asn Gln Ser Leu Lys Ile Ala Asp Lys Gly
 65 70 75 80
 Ile Asp Ile Ala Arg Ala Glu Arg Gly Lys Leu Asn Ala Phe Trp Met
 85 90 95
 Pro Ser Leu Gln Ser Thr Gly Ala Phe Val His Leu Ser Glu Lys Ile
 100 105 110
 Glu Val Lys Gln Pro Leu Ser Gln Phe Thr Asp Pro Ala Lys Asp Phe

115	120	125
Val His Ser Ile Leu Pro Asp Asp Lys Ile Ile Ser Ser Ile Leu Asp		
130	135	140
Gln Ile Gly Thr Asn Thr Leu Ile Phe Pro Leu Ala Pro Arg Asn Leu		
145	150	155
Thr Thr Val Asp Leu Thr Ala Glu Trp Val Leu Phe Ala Gly Gly Lys		
165	170	175
Arg Ile His Ala Thr Lys Ile Gly Asn Thr Met Ile Asp Leu Ala Arg		
180	185	190
Glu Asn Arg Ala Gln Thr Asp Ala Thr Gln Arg Thr Leu Leu Ala Glu		
195	200	205
Ser Tyr Tyr Gly Leu Arg Leu Ala Gln Glu Ile Val Gly Val Arg Leu		
210	215	220
Glu Ser Tyr Lys Ala Leu Lys Leu His Tyr Glu Asn Ala Leu Lys Leu		
225	230	235
Glu Ser Thr Gly Met Ile Asp Lys Ala Ala Arg Leu Phe Ala Gln Val		
245	250	255
Asn Met Asp Glu Ala Leu Arg Glu Leu Glu Ala Ala Arg Lys Glu Glu		
260	265	270
Ala Val Val Gln Arg Thr Leu Lys Thr Leu Leu Asn Leu Glu Thr Ser		
275	280	285
Gly Asp Ile Ser Pro Ser Ser Pro Leu Phe Ile Asn Asp Thr Leu Pro		
290	295	300
Pro Lys Met Glu Phe Met Gln Val Val Gly Ile Ser Asn Tyr Leu Leu		
305	310	315
Asn Gln Leu Ser Leu Gln Glu His Met Ala Lys Gln Gln Val Arg Ile		
325	330	335
Asp Gln Ser Gly Tyr Leu Pro Asn Ile Ala Leu Phe Gly Lys Gln Thr		
340	345	350
Leu Tyr Ser His Gly Ile Gln Ser Asn Leu Leu Pro Arg Thr Met Ile		
355	360	365
Gly Val Gly Phe Thr Trp Asn Leu Phe Asp Gly Leu Glu Arg Glu Lys		
370	375	380
Arg Ile Arg Gln Ser Arg Leu Thr Gln Gln Thr Leu Ala Leu Gly Gln		
385	390	395
Glu Lys Ala Arg Asp Asp Leu Ser Val Gly Val Asp Lys Leu Tyr Thr		
405	410	415
Gly Leu Gln Lys Ala Leu Asp Asn Val Arg Ala Leu Asn Thr Thr Ile		
420	425	430
Glu Leu Ser Glu Glu Leu Val Arg Met Arg Lys Lys Ala Phe Ala Glu		
435	440	445
Gly Met Val Thr Ser Thr Glu Val Val Asp Ala Glu Thr Leu Leu Ser		
450	455	460
Lys Thr Lys Val Ala Arg Leu Ala Ala Tyr Tyr Glu Tyr Asp Val Thr		
465	470	475
Leu Met Asn Leu Leu Ala Leu Cys Gly Ile Pro Glu Gln Phe Gly Ser		
485	490	495
Met Lys Asp Ile Thr Ser Leu Pro Ile Thr Glu Asn Arg Arg Asn Glu		
500	505	510
Ile Glu Ile Glu		
515		

<210> 5890

<211> 66

<212> PRT

<213> B.fragilis

<400> 5890

Lys Thr Gln Pro Ser Phe Gly Val Asn Ala Tyr Phe Phe Trp Ser Lys

1 5 10 15
 Tyr Arg Leu Phe Glu Val Lys Thr Gln Thr Leu Pro Leu Pro Lys Pro
 20 25 30
 Gly Phe Leu Gly Lys Glu Ala Glu Ser Ser Gly Thr Phe Ser Pro Ile
 35 40 45
 Trp Val Arg Lys Gln Lys Gly Ile Val Ser Arg Lys Cys His Tyr Leu
 50 55 60
 Ser Phe
 65

<210> 5891
 <211> 144
 <212> PRT
 <213> B.fragilis

<400> 5891
 Phe Leu Tyr Thr Leu Pro Asp Phe Val Cys Trp Leu Pro Gly Ala Trp
 1 5 10 15
 Gly Ser Gly Ile His Leu Cys His Phe Leu Ser Ser Gly Thr Pro Leu
 20 25 30
 Glu Arg Leu Gln Ser Val Phe Gly His Ile Asn Gly Met Pro Ala Leu
 35 40 45
 Ser Ser Ala Ser Glu Ala Lys Lys Met Cys Met Phe Leu Arg Trp Met
 50 55 60
 Ile Arg Arg Asp Ser Pro Val Asp Leu Gly Ile Trp Arg Ser Phe Ser
 65 70 75 80
 Pro Ser Asp Leu Ile Ile Pro Leu Asp Thr His Val His Arg Ile Ser
 85 90 95
 Thr Asp Leu Gly Leu Thr Asn Ala Arg Lys Cys Leu Lys Thr Ala Arg
 100 105 110
 Cys Ile Thr Asp Ala Leu Arg Glu Ile Trp Pro Asp Asp Pro Val Lys
 115 120 125
 Gly Asp Phe Ala Leu Phe Gly Phe Gly Ile Asn Glu Pro Val Lys Ser
 130 135 140

<210> 5892
 <211> 268
 <212> PRT
 <213> B.fragilis

<400> 5892
 Gln Gly Gly Ala Gly Met Ala Asn Trp Ile Thr Leu Lys Gln Leu Ser
 1 5 10 15
 Glu Lys Arg Gly Ile Ala Glu Ser Asp Leu Arg Thr Trp Ala Asn Leu
 20 25 30
 Gly Tyr Ile Thr Ser Ser Arg Ile Glu Asn Val Leu Met Ile Asp Asp
 35 40 45
 Glu Ser Leu Thr Gln Tyr Leu Asp Val His Gln Thr Lys Asp Leu Gly
 50 55 60
 Glu Asn Tyr Leu Glu Lys Ile Ile Lys Glu Lys Glu Leu Glu Arg Glu
 65 70 75 80
 Val Leu Leu Ser Gln Cys Asp Asp Glu Leu Phe Leu Leu Lys Thr Gln
 85 90 95
 Lys Leu His Gln Pro Leu Phe His Ile Leu Ile Gln Glu Leu Gly Gln
 100 105 110
 Leu Ile Thr Asp Asp His Glu Arg Glu Ile Phe Leu Ser Val Ser Ser
 115 120 125
 Gly Glu Pro Ile Ala Arg Val Ala Lys Arg Asn Lys Met Thr Tyr Ala
 130 135 140

Arg	Val	Ala	Thr	Cys	Tyr	Ser	Ser	Ile	Leu	Arg	Thr	Leu	Gly	Glu	His
145					150					155					160
Lys	Gly	Arg	Ile	Ala	Thr	Phe	Arg	Ser	Arg	Thr	Met	Glu	Leu	Met	Phe
				165						170					175
Asp	Lys	Cys	Asn	Ala	Val	Thr	Pro	Val	Asn	Thr	Pro	Leu	Ser	Asn	Leu
			180						185					190	
Val	Gly	Ala	His	Ala	Tyr	Asn	Val	Leu	Tyr	Gly	Glu	Met	Gly	Phe	Arg
	195						200					205			
Thr	Val	Arg	Asp	Leu	Leu	Gln	Tyr	Ala	Thr	Gln	Asn	Gly	Trp	Gln	Ser
	210					215					220				
Leu	Arg	Arg	Phe	Lys	Gly	Met	Gly	Leu	Val	Thr	Tyr	Lys	Ser	Val	Met
225					230					235					240
Asn	Ala	Leu	Arg	Asp	Ala	Asn	Phe	Ile	Ile	Val	Arg	Lys	Asp	Gly	Asn
			245						250					255	
Ile	Glu	Leu	Ser	Pro	Glu	Ile	Ala	Ala	Leu	Val	Ile				
			260						265						

<210> 5893

<211> 413

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (379)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 5893

Glu	Lys	Arg	Tyr	Ser	Gln	Trp	Asp	Ser	Val	Leu	Leu	Cys	Gly	Lys	Ser
1				5					10					15	
Lys	Leu	Lys	Asp	Asn	Leu	Ile	Met	Gln	His	Ser	Pro	Ile	Thr	Arg	Val
			20					25					30		
Ile	Gln	Cys	Glu	Trp	Gln	Arg	Met	Thr	Ser	Arg	Arg	Leu	Tyr	Phe	Gly
		35				40						45			
Val	Cys	Leu	Val	Leu	Pro	Leu	Phe	Thr	Leu	Phe	Phe	Met	Ala	Thr	Ile
	50					55				60					
Phe	Gly	Asn	Gly	Gln	Met	Glu	Asn	Ile	Pro	Ile	Gly	Ile	Val	Asp	Arg
65					70					75					80
Asp	Asn	Thr	Ala	Thr	Ser	Arg	Asp	Ile	Thr	Arg	Arg	Met	Ser	Ala	Val
				85					90					95	
Pro	Thr	Phe	Arg	Val	Thr	Arg	His	Phe	Val	Asp	Glu	Ala	Glu	Ala	Arg
			100					105					110		
Lys	Ala	Val	Gln	Gln	Lys	Glu	Ile	Tyr	Gly	Tyr	Leu	Ser	Ile	Pro	Pro
		115					120					125			
Arg	Phe	Glu	Gln	Asp	Met	Ile	Ser	Gly	Gln	Asp	Ala	Thr	Leu	Asn	Tyr
	130					135					140				
Tyr	Tyr	His	Tyr	Ala	Leu	Leu	Ser	Val	Gly	Gly	Glu	Leu	Met	Ala	Ala
145					150					155					160
Phe	Glu	Ser	Ser	Leu	Ala	Pro	Val	Ala	Leu	Ser	Pro	Ile	Val	Met	Lys
			165						170					175	
Ala	Val	Ala	Leu	Gly	Val	Asn	Glu	Gln	Gln	Ile	Glu	Thr	Phe	Leu	Leu
		180						185					190		
Pro	Val	Gln	Ala	Asn	Asn	His	Pro	Ile	Tyr	Asn	Pro	Ser	Leu	Asp	Tyr
		195					200					205			
Ser	Val	Tyr	Leu	Ser	Gln	Pro	Phe	Phe	Phe	Val	Leu	Phe	Gln	Val	Leu
	210					215					220				
Val	Leu	Leu	Ile	Thr	Val	Tyr	Ala	Val	Gly	Ser	Glu	Ile	Lys	Phe	Gly
225					230					235					240
Thr	Ala	Gly	Gln	Trp	Leu	Gln	Ala	Ala	Gly	Gly	Asp	Ile	Thr	Val	Ala

[illegible]

<400> 5894

Ile	Lys	Asn	Leu	Tyr	Phe	Met	Glu	Ile	Phe	Trp	Lys	Thr	Ile	Ala	Tyr
1				5					10					15	
Tyr	Asn	Ser	Ala	Thr	Trp	Ile	Tyr	Gln	Leu	Leu	Ile	Ile	Val	Ala	Gly
			20					25					30		
Leu	Leu	Leu	Thr	Val	Met	Leu	Ile	Lys	Asn	Pro	Arg	Pro	Trp	Val	Lys
			35				40					45			
Met	Gly	Met	Lys	Leu	Tyr	Met	Ile	Phe	Leu	Tyr	Leu	Trp	Ile	Ala	Ile
	50					55					60				
Ala	Tyr	Tyr	Ala	Ile	Cys	Cys	Asp	Glu	Arg	Ser	Tyr	Asn	Gly	Ala	Leu
65					70					75					80
Ala	Met	Phe	Trp	Val	Val	Met	Ala	Thr	Ile	Trp	Val	Trp	Asp	Ala	Ile
				85					90					95	
Thr	Gly	Tyr	Thr	Thr	Phe	Glu	Arg	Thr	Tyr	Lys	Tyr	Asp	Ile	Leu	Ser
			100					105					110		
Tyr	Val	Leu	Leu	Ile	Leu	Pro	Phe	Val	Tyr	Pro	Leu	Val	Ser	Ile	Ala
			115				120					125			
Arg	Gly	Leu	Thr	Phe	Pro	Gly	Ile	Thr	Ser	Pro	Val	Met	Pro	Cys	Ser
	130					135					140				
Val	Thr	Val	Phe	Thr	Ile	Gly	Leu	Leu	Leu	Leu	Phe	Ser	Arg	Lys	Val
145					150						155				160
Asn	Met	Phe	Leu	Val	Leu	Phe	Leu	Cys	His	Trp	Ser	Leu	Ile	Gly	Leu
				165					170					175	
Ser	Lys	Thr	Tyr	Phe	Phe	Asn	Ile	Pro	Glu	Asp	Phe	Leu	Leu	Ala	Ser
			180					185					190		
Ala	Thr	Ile	Pro	Ala	Leu	Tyr	Leu	Phe	Phe	Arg	Glu	Tyr	Phe	Leu	Asn
			195				200					205			
Asn	Leu	His	Ala	Asp	Thr	Lys	Pro	Lys	Ala	Lys	Tyr	Ile	Asn	Trp	Leu
	210					215					220				
Leu	Val	Phe	Val	Cys	Val	Ser	Ile	Gly	Ile	Leu	Thr	Thr	Thr	Thr	Leu
225					230					235					240
Phe	Leu	Glu	Leu	Met	Pro	Gly	Lys	Gln	Pro						

245

250

<210> 5895
 <211> 500
 <212> PRT
 <213> B.fragilis

<400> 5895

Arg	Asp	Glu	His	Asp	Met	Asn	Lys	Asn	Leu	His	Pro	Leu	Met	Leu	Ala
1				5					10					15	
Gly	Thr	Gly	Ser	Asp	Val	Gly	Lys	Ser	Ile	Ile	Ala	Ala	Ala	Phe	Cys
			20					25					30		
Arg	Ile	Phe	Leu	Gln	Asp	Gly	Tyr	His	Pro	Ala	Pro	Phe	Lys	Ala	Gln
		35					40					45			
Asn	Met	Ala	Leu	Asn	Ser	Tyr	Ala	Thr	Pro	Glu	Gly	Leu	Glu	Ile	Gly
	50					55					60				
Arg	Ala	Gln	Ala	Val	Gln	Ala	Glu	Ala	Ala	Gly	Val	Pro	Cys	His	Thr
65					70					75					80
Asp	Met	Asn	Pro	Leu	Leu	Leu	Lys	Pro	Ser	Ser	Asp	His	Thr	Ser	Gln
				85					90					95	
Val	Val	Leu	Asn	Gly	Arg	Pro	Ile	Gly	Asn	Arg	Asn	Ala	Tyr	Glu	Tyr
			100					105						110	
Phe	Arg	Arg	Glu	Gly	Arg	Glu	Glu	Leu	Arg	Lys	Glu	Val	His	Ala	Ala
			115				120						125		
Phe	Asp	Arg	Leu	Ala	Ala	Arg	Tyr	Asn	Pro	Val	Val	Met	Glu	Gly	Ala
	130						135					140			
Gly	Ser	Ile	Ser	Glu	Ile	Asn	Leu	Arg	Asp	Ser	Asp	Leu	Val	Asn	Leu
145					150					155					160
Pro	Met	Ala	Met	His	Ala	Gly	Ala	Asp	Val	Ile	Leu	Val	Ala	Asp	Ile
				165					170					175	
Asp	Arg	Gly	Gly	Val	Phe	Ala	Ser	Val	Tyr	Gly	Ser	Val	Met	Leu	Leu
			180					185					190		
Arg	Pro	Glu	Glu	Arg	Lys	His	Ile	Lys	Gly	Ile	Leu	Ile	Asn	Lys	Phe
		195					200						205		
Arg	Gly	Asp	Ile	Arg	Leu	Phe	Glu	Ser	Gly	Val	Lys	Met	Leu	Glu	Asp
	210					215						220			
Leu	Cys	Gly	Val	Pro	Val	Val	Gly	Val	Val	Pro	Tyr	Tyr	Lys	Asp	Ile
225					230					235					240
Tyr	Ile	Glu	Glu	Glu	Asp	Ser	Val	Met	Leu	Gln	Thr	Lys	Asn	Ile	Arg
				245					250					255	
Ala	Gly	Gln	Gly	Lys	Val	Asn	Val	Ala	Val	Val	Leu	Leu	Arg	His	Leu
			260					265						270	
Ser	Asn	Phe	Thr	Asp	Phe	Asn	Val	Leu	Glu	Arg	Asp	Pro	Arg	Val	His
		275					280					285			
Leu	Phe	Tyr	Thr	Asn	Asn	Thr	Asp	Glu	Leu	Met	Lys	Ala	Asp	Ile	Ile
	290					295					300				
Leu	Leu	Pro	Gly	Ser	Lys	Ser	Thr	Leu	Ser	Asp	Leu	Tyr	Glu	Leu	Arg
305					310					315					320
Arg	Asn	Gly	Val	Ala	Gln	Ala	Ile	Val	Arg	Ala	His	Arg	Glu	Gly	Ala
				325					330					335	
Thr	Val	Met	Gly	Ile	Cys	Gly	Gly	Tyr	Gln	Leu	Met	Gly	Arg	Glu	Val
			340					345					350		
Cys	Asp	Pro	Asp	His	Val	Glu	Gly	Ile	Glu	Arg	Leu	Pro	Gly	Leu	
		355					360					365			
Gly	Leu	Leu	Pro	Val	Ser	Thr	Arg	Met	Gln	Gly	Glu	Lys	Val	Thr	Arg
	370					375					380				
Gln	Val	Arg	Phe	Cys	Phe	Leu	Glu	Asp	Ser	Ala	Val	Cys	Glu	Gly	Tyr
385					390					395					400
Glu	Ile	His	Met	Gly	Thr	Thr	Thr	Pro	Leu	Ala	Asp	Val	Pro	Val	Ser

405 410 415
 Pro Leu Asn His Leu Ala Asp Gly Arg Glu Asp Gly Tyr Phe Val Asp
 420 425 430
 Arg Thr Cys Met Gly Thr Tyr Val His Gly Ile Leu Asp Asn Pro Ser
 435 440 445
 Val Ile Asp Tyr Leu Leu Glu Pro Phe Ala Asp Lys Leu Lys Glu Thr
 450 455 460
 Ala Phe Asp Tyr Lys Ala Phe Lys Glu Glu Gln Tyr Asp Lys Leu Ala
 465 470 475 480
 Ala His Val Arg Lys His Val Asp Leu Pro Leu Ile Tyr Gln Ile Leu
 485 490 495
 Thr Asp Asn Asp
 500

<210> 5896

<211> 400

<212> PRT

<213> B.fragilis

<400> 5896

Ser Val Val Asn Met Lys Thr Ser Gly Lys Leu Ser Gln Ile Ser Phe
 1 5 10 15
 Ile Ile Ala Arg Glu Phe Arg Ala Ile Ser Thr Ser Tyr Ala Val Leu
 20 25 30
 Leu Val Leu Met Gly Gly Ile Phe Val Tyr Gly Leu Leu Tyr Asn Tyr
 35 40 45
 Met Tyr Ala Pro Asn Ile Val Thr Asp Ala Pro Val Ala Val Val Asp
 50 55 60
 Asn Ser His Ser Ser Leu Ser Arg Gln Tyr Ile Arg Trp Leu Asp Ala
 65 70 75 80
 Thr Pro Gln Val Ala Val Tyr Ala Gln Ala Met Asp Tyr Arg Glu Ala
 85 90 95
 Arg Glu Trp Met Lys Glu Gly Lys Val Gln Gly Ile Leu Tyr Ile Pro
 100 105 110
 His Asp Phe Glu Thr Arg Val Phe Gln Gly Arg Glu Ala Val Phe Ser
 115 120 125
 Leu Tyr Ala Thr Thr Asp Ala Phe Leu Tyr Phe Glu Ala Leu Gln Glu
 130 135 140
 Ala Thr Ser Arg Val Tyr Leu Ala Ile Asn Asp Ala His Arg Met Asp
 145 150 155 160
 Gly Ala Val Phe Leu Pro Pro Gln Gly Leu Leu Ala Val Ala Met Ala
 165 170 175
 Lys Pro Val Asn Val Thr Gly Thr Ala Leu Tyr Asn His Thr Glu Gly
 180 185 190
 Tyr Gly Ser Tyr Leu Ile Pro Ala Val Met Met Val Ile Ile Phe Gln
 195 200 205
 Thr Leu Leu Met Val Ile Gly Met Leu Thr Gly Asp Glu Tyr Gln His
 210 215 220
 Arg Ala Thr Glu Pro Leu Leu Pro Gly Gly Arg Thr Val Asp Lys Ser
 225 230 235 240
 Gly Leu Trp Gly Gly Ala Met Arg Leu Val Ala Gly Lys Thr Phe Val
 245 250 255
 Tyr Cys Gly Leu Tyr Thr Val Phe Ser Met Phe Leu Leu Gly Leu Leu
 260 265 270
 Pro His Phe Phe Ser Ile Pro Asn Ile Gly Asn Gly Leu Tyr Ile Thr
 275 280 285
 Ala Met Met Val Pro Tyr Leu Met Ala Thr Ser Phe Phe Gly Leu Ala
 290 295 300
 Ala Ser Arg Tyr Phe Thr Asp Ser Glu Ala Pro Leu Leu Met Ile Ala

Variable	Unit	Mean	SD	Min	Max
Age	Years	45.2	12.5	18	78
Gender	Male/Female	52/48	-	-	-
Education	Years	12.8	2.1	8	16
Income	\$/Year	25,000	15,000	10,000	50,000
Health	Good/Bad	65/35	-	-	-
Marital	Married/Single	70/30	-	-	-
Occupation	Various	15	5	1	25
Smoking	Yes/No	30/70	-	-	-
Alcohol	Yes/No	25/75	-	-	-
Exercise	Yes/No	40/60	-	-	-
Stress	High/Low	55/45	-	-	-
Family	Size	2.5	1.2	1	5
Religion	Various	10	3	1	20
Travel	Miles/Year	10,000	5,000	0	25,000
Home	Owned/Rent	60/40	-	-	-
Vehicle	Owned/Rent	75/25	-	-	-
Insurance	Yes/No	90/10	-	-	-
Medical	Cost/Year	5,000	3,000	0	15,000
Pharmacy	Cost/Year	1,000	500	0	3,000
Dental	Cost/Year	500	250	0	1,500
Vision	Cost/Year	200	100	0	500
Hearing	Cost/Year	100	50	0	300
Prescription	Cost/Year	300	150	0	800
Medical	Visits/Year	3	2	0	10
Pharmacy	Visits/Year	2	1	0	5
Dental	Visits/Year	1	1	0	3
Vision	Visits/Year	1	1	0	2
Hearing	Visits/Year	0.5	0.5	0	1
Prescription	Visits/Year	1.5	0.5	0	3

<400> 5897

[illegible]

<210> 5898
 <211> 206
 <212> PRT
 <213> B.fragilis

<400> 5898

Ser	His	Ala	Lys	Ile	Asn	Ile	Val	Ser	Glu	Ile	Pro	Ile	Ala	Met	Ala
1				5					10					15	
Gln	Tyr	Phe	Ala	Ser	Gly	Asn	Gly	Asn	Ile	Lys	Tyr	Tyr	Arg	Thr	Phe
			20					25					30		
Ala	Asn	Gln	Lys	Tyr	Thr	Asp	Arg	Phe	Met	Lys	Gln	Ile	Ile	Leu	Ile
		35					40					45			
Thr	Gly	Gly	Ala	Arg	Ser	Gly	Lys	Ser	Ser	Tyr	Ala	Glu	Arg	Leu	Ala
	50					55					60				
Leu	Ser	Leu	Ser	Pro	Asn	Pro	Val	Tyr	Leu	Ala	Thr	Ser	Arg	Ile	Trp
65					70				75					80	
Asp	Glu	Glu	Phe	Arg	Gln	Arg	Val	Leu	Arg	His	Gln	Ala	Asn	Arg	Gly
				85					90					95	
Pro	Glu	Trp	Thr	Asn	Ile	Glu	Glu	Glu	Lys	Glu	Leu	Ser	Arg	His	Ser
			100					105					110		
Leu	Glu	Gly	Arg	Val	Val	Leu	Ile	Asp	Cys	Val	Thr	Leu	Trp	Cys	Thr
		115					120					125			
Asn	Tyr	Phe	Phe	Asp	Leu	Glu	Ala	Asp	Thr	Asp	Lys	Ala	Leu	Thr	Ala
	130					135					140				
Val	Lys	Ala	Glu	Phe	Asp	Arg	Leu	Thr	Gln	Gln	Asp	Ala	Thr	Leu	Ile
145					150					155					160
Phe	Val	Thr	Asn	Glu	Ile	Gly	Met	Gly	Gly	Thr	Ser	Glu	Asn	Leu	Ile
				165					170					175	
Gln	Arg	Lys	Phe	Thr	Asp	Met	Gln	Gly	Trp	Met	Thr	Gln	Tyr	Ile	Ala
			180					185					190		
Ser	Arg	Ala	Asn	Arg	Val	Ile	Leu	Met	Glu	Arg	Gly	Phe	Leu		
		195					200					205			

<210> 5899
 <211> 502
 <212> PRT
 <213> B.fragilis

<400> 5899

Lys	Lys	Lys	Asn	Ile	Met	Ala	Lys	Glu	Leu	Lys	Asp	Leu	Thr	Lys	Arg
1				5					10					15	
Ser	Glu	Asn	Tyr	Ser	Gln	Trp	Tyr	Asn	Asp	Leu	Val	Val	Lys	Ala	Asp
			20					25					30		
Leu	Ala	Glu	Gln	Ser	Ala	Val	Arg	Gly	Cys	Met	Val	Ile	Lys	Pro	Tyr
		35					40					45			
Gly	Tyr	Ala	Ile	Trp	Glu	Lys	Met	Gln	Arg	Gln	Leu	Asp	Asp	Met	Phe
	50					55					60				
Lys	Glu	Thr	Gly	His	Val	Asn	Ala	Tyr	Phe	Pro	Leu	Leu	Ile	Pro	Lys
65					70				75					80	
Ser	Phe	Leu	Ser	Arg	Glu	Ala	Glu	His	Val	Glu	Gly	Phe	Ala	Lys	Glu
				85				90						95	
Cys	Ala	Val	Val	Thr	His	Tyr	Arg	Leu	Lys	Asn	Ala	Glu	Asp	Gly	Ser
			100					105					110		
Gly	Val	Val	Val	Asp	Pro	Ala	Ala	Lys	Leu	Glu	Glu	Glu	Leu	Ile	Ile
		115					120					125			
Arg	Pro	Thr	Ser	Glu	Thr	Ile	Ile	Trp	Asn	Thr	Tyr	Lys	Asn	Trp	Ile
	130					135					140				

Gln Ser Tyr Arg Asp Leu Pro Ile Leu Cys Asn Gln Trp Ala Asn Val
 145 150 155 160
 Phe Arg Trp Glu Met Arg Thr Arg Leu Phe Leu Arg Thr Ala Glu Phe
 165 170 175
 Leu Trp Gln Glu Gly His Thr Ala His Ala Thr Arg Glu Glu Ala Glu
 180 185 190
 Glu Glu Ala Ile Arg Met Leu Asn Val Tyr Ala Glu Phe Ala Glu Lys
 195 200 205
 Tyr Met Ala Val Pro Val Val Lys Gly Val Lys Ser Ala Asn Glu Arg
 210 215 220
 Phe Ala Gly Ala Leu Asp Thr Tyr Thr Ile Glu Ala Met Met Gln Asp
 225 230 235 240
 Gly Lys Ala Leu Gln Ser Gly Thr Ser His Phe Leu Gly Gln Asn Phe
 245 250 255
 Ala Lys Ala Phe Asp Val Gln Phe Val Asn Lys Glu Asn Lys Leu Glu
 260 265 270
 Tyr Val Trp Ala Thr Ser Trp Gly Val Ser Thr Arg Leu Met Gly Ala
 275 280 285
 Leu Ile Met Thr His Ser Asp Asp Asn Gly Leu Val Leu Pro Pro His
 290 295 300
 Leu Ala Pro Ile Gln Val Val Ile Val Pro Ile Tyr Lys Asn Asp Glu
 305 310 315 320
 Gln Leu Lys Leu Ile Asp Ala Lys Val Glu Gly Ile Val Ala Arg Leu
 325 330 335
 Lys Gln Leu Gly Ile Ser Val Lys Tyr Asp Asn Ala Asp Asn Lys Arg
 340 345 350
 Pro Gly Phe Lys Phe Ala Asp Tyr Glu Leu Lys Gly Val Pro Val Arg
 355 360 365
 Leu Val Met Gly Gly Arg Asp Leu Glu Asn Asn Thr Met Glu Val Met
 370 375 380
 Arg Arg Asp Thr Leu Glu Lys Glu Thr Val Thr Cys Asp Gly Ile Glu
 385 390 395 400
 Thr Tyr Val Gln Asn Leu Leu Glu Glu Ile Gln Ala Asn Ile Tyr Lys
 405 410 415
 Lys Ala Arg Thr Tyr Arg Asp Ser Arg Ile Thr Thr Val Asp Ser Tyr
 420 425 430
 Asp Glu Phe Lys Glu Lys Ile Glu Glu Gly Gly Phe Ile Leu Ala His
 435 440 445
 Trp Asp Gly Thr Val Glu Thr Glu Glu Lys Ile Lys Glu Glu Thr Lys
 450 455 460
 Ala Thr Ile Arg Cys Ile Pro Phe Glu Ser Phe Val Glu Gly Asp Lys
 465 470 475 480
 Glu Pro Gly Lys Cys Met Val Thr Gly Lys Pro Ser Ala Cys Arg Val
 485 490 495
 Ile Phe Ala Arg Ser Tyr
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<210> 5900

<211> 168

<212> PRT

<213> B.fragilis

<400> 5900

Val Tyr Met Lys Gln Glu Leu Lys Glu Lys Leu Leu Leu Leu Ala Asp
 1 5 10 15
 Lys Tyr Glu Val Lys Glu Phe Ile Met Asp Asp Pro Ile Gln Phe Pro
 20 25 30
 His Arg Tyr Thr Asp Lys Ala Asp Ile Glu Ile Ser Gly Leu Ile Ala
 35 40 45

Phe Trp Ile Ala Thr Gly Asn Arg Lys Ala Ile Ile Lys Ser Gly Asp
 50 55 60
 Arg Ile Asp His Glu Leu Phe Leu Asn Ala Pro Tyr Arg Tyr Ile Leu
 65 70 75 80
 Ser Glu Glu Trp Arg Lys Tyr Arg Gly Ser Asn Ile Gln Phe Phe Ile
 85 90 95
 Ala Ile Thr Pro Gly Met Ile Ser Ile Tyr Ser Ala Arg Leu Cys Met
 100 105 110
 Leu Ala Thr Gly Ser Met Gly Ile Trp Asn Pro Phe Val Pro Phe Ser
 115 120 125
 Leu Phe Arg Tyr Ala Ile Gly Lys Ile Ala Ile Gly Val Arg Thr Tyr
 130 135 140
 Gln Trp Asp Ala Cys Phe Val Lys Cys Phe Arg Ser Lys Glu Asn Val
 145 150 155 160
 Tyr Val Ser Ala Leu Asp Asp Ser
 165

<210> 5901
 <211> 114
 <212> PRT
 <213> B.fragilis

<400> 5901

Ser Val Val Lys Phe Ile Ile Thr Tyr Ser Phe Val Lys Leu Val Pro
 1 5 10 15
 Tyr Lys Met Phe Ser Gly Ser Lys Arg Gln Val Met Ala Phe Ser Ala
 20 25 30
 Asn Tyr Pro Phe Leu Phe Ser Tyr Pro Tyr Arg Gly Glu Cys Pro Gly
 35 40 45
 Thr Phe Cys Phe Phe Ala Gln Lys Thr Gly Leu Gly Lys Gly Lys Ser
 50 55 60
 Leu Cys Phe His Phe Glu Glu Pro Ile Phe Arg Pro Lys Glu Val Ser
 65 70 75 80
 Ile Tyr Ser Glu Arg Arg Leu Cys Phe Ser Lys Met Asn Lys Ser Phe
 85 90 95
 Ala Gln Tyr Leu Tyr Met Phe Ser Ser Ile Thr Tyr Ile Val Leu Ile
 100 105 110
 Trp Glu

<210> 5902
 <211> 333
 <212> PRT
 <213> B.fragilis

<400> 5902

Glu Met Glu Asn Ser Glu Ser Lys Lys Gly Arg Thr Leu Ser Ile Ala
 1 5 10 15
 Phe Ile Val Val Leu Val Ala Val Ala Leu Phe Thr Val Ile Gly Met
 20 25 30
 Ile Ala Met Arg His Gln Pro Leu Val Leu Gln Gly Gln Ala Glu Ala
 35 40 45
 Thr Glu Ile Arg Ile Ser Gly Lys Leu Pro Gly Arg Ile Asp Thr Phe
 50 55 60
 Leu Val Glu Glu Gly Gln Trp Val Lys Gln Gly Asp Thr Leu Val Val
 65 70 75 80
 Ile Asn Ser Pro Thr Val Glu Ala Lys Tyr Arg Gln Val Asp Ala Leu
 85 90 95
 Lys Gln Val Ala Val Glu Gln Asn Lys Lys Ile Asp Ala Gly Thr Arg

	100		105		110										
Lys	Gln	Ile	Ile	Ala	Thr	Ala	Gln	Gln	Leu	Trp	Asn	Lys	Thr	Gln	Ser
	115		120		125										
Asp	Leu	Thr	Leu	Ala	Arg	Thr	Thr	Tyr	Asn	Arg	Ile	Leu	Thr	Leu	Tyr
	130		135		140										
Lys	Asp	Ser	Val	Val	Thr	Ser	Gln	Arg	Lys	Asp	Glu	Val	Glu	Ala	Met
	145		150		155										
Tyr	Lys	Ala	Ala	Gln	Ala	Ala	Glu	Arg	Ala	Ala	Tyr	Glu	Gln	Tyr	Gln
	165		170		175										
Met	Ala	Val	Asp	Gly	Ala	Gln	Ser	Glu	Asp	Lys	Ala	Ser	Ala	Arg	Ser
	180		185		190										
Met	Val	Asn	Ala	Ala	Asn	Ser	Thr	Val	Asp	Glu	Val	Ser	Ser	Leu	Leu
	195		200		205										
Val	Asp	Ala	Arg	Leu	Ile	Ala	Pro	Glu	Asp	Gly	Gln	Ile	Ala	Thr	Ile
	210		215		220										
Phe	Pro	Lys	Arg	Gly	Glu	Leu	Val	Ala	Pro	Gly	Thr	Pro	Ile	Met	Asn
	225		230		235										
Leu	Val	Val	Met	Asp	Asp	Ile	His	Val	Val	Leu	Asn	Val	Arg	Glu	Asp
	245		250		255										
Leu	Met	Pro	Asp	Phe	Arg	Met	Gly	Gly	Thr	Phe	Ile	Gly	Asp	Val	Pro
	260		265		270										
Ala	Leu	Ala	Gln	Lys	Gly	Ile	Gly	Phe	Lys	Ile	Tyr	Tyr	Ile	Ser	Pro
	275		280		285										
Leu	Gly	Ser	Phe	Ala	Thr	Trp	Lys	Ser	Thr	Lys	Gln	Thr	Gly	Ser	Tyr
	290		295		300										
Asp	Leu	Gln	Thr	Phe	Glu	Ile	His	Ala	Arg	Pro	Thr	Lys	Lys	Val	Glu
	305		310		315										
Gly	Leu	Arg	Pro	Gly	Met	Ser	Val	Leu	Val	Glu	Ile	Lys			
	325		330												

<210> 5903
 <211> 136
 <212> PRT
 <213> B.fragilis

	<400> 5903														
Glu	Pro	Glu	Lys	Ala	Ser	Gln	Asp	Arg	Pro	Lys	Asn	Tyr	Leu	Gln	Asn
1	5		10		15										
Leu	Ser	Glu	Lys	Gly	Lys	Val	Met	Ile	Glu	Ile	His	Thr	Ile	Val	Thr
	20		25		30										
Phe	Asp	Lys	Glu	Met	Lys	Arg	Leu	Ser	Lys	Lys	Tyr	His	Ser	Ile	Ile
	35		40		45										
Lys	Asp	Tyr	Ala	Ala	Leu	Ile	Glu	Asp	Leu	Lys	Lys	Asn	Pro	His	Ile
	50		55		60										
Gly	Val	Asp	Leu	Gly	Asn	Gly	Ile	Arg	Lys	Val	Arg	Met	Ala	Ile	Ala
	65		70		75										
Ser	Lys	Gly	Lys	Gly	Lys	Ser	Gly	Gly	Ala	Arg	Val	Ile	Thr	Asp	Thr
	85		90		95										
Ser	Ala	Ile	Ile	Ser	Val	Glu	Glu	Gly	Arg	Val	Thr	Leu	Leu	Thr	Ile
	100		105		110										
Tyr	Asp	Lys	Ser	Asp	Arg	Glu	Asn	Ile	Ser	Asp	Asn	Glu	Ile	Ile	Arg
	115		120		125										
Leu	Gln	Gln	Glu	Ile	Leu	Lys	Lys								
	130		135												

<210> 5904
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 5904

Lys Gln Phe Asp Met Ile Ala Leu Asp Ile Leu Ser Asp Gly Phe Phe
 1 5 10 15
 Ala Ala Ile Ala Gly Ile Gly Phe Gly Ala Ile Ser Asp Pro Pro Leu
 20 25 30
 Arg Ala Phe Lys Met Ile Ala Ile Leu Ala Ala Ala Gly His Ala Cys
 35 40 45
 Arg Tyr Cys Leu Met Thr Phe Leu Gly Val Asp Ile Ala Thr Ala Ser
 50 55 60
 Leu Phe Gly Ala Leu Val Ile Gly Phe Gly Ser Leu Trp Leu Gly Arg
 65 70 75 80
 Lys Val Tyr Cys Pro Met Thr Val Leu Tyr Ile Pro Ala Leu Leu Pro
 85 90 95
 Met Ile Pro Gly Lys Phe Ala Tyr Asn Met Val Phe Ser Leu Ile Met
 100 105 110
 Ser Leu Gln Thr Met Asn Glu Pro Glu Arg Leu Gly Lys Tyr Met Glu
 115 120 125
 Thr Phe Phe Ser Asn Gly Leu Val Thr Cys Thr Val Ile Phe Met Leu
 130 135 140
 Ala Val Gly Ala Thr Phe Pro Met Phe Leu Leu Pro His Lys Ala Phe
 145 150 155 160
 Ser Leu Thr Arg His
 165

<210> 5905

<211> 279

<212> PRT

<213> B.fragilis

<400> 5905

Asn Asp Leu Cys Ala Phe Ser Phe Leu Ser Phe Leu Tyr Phe Cys Ala
 1 5 10 15
 Arg Phe Lys Lys Val Ser Asn Phe Met Thr Thr Asn Glu Ser Leu Ile
 20 25 30
 Ser Ile Ser Lys Phe Ile Ala Gly Tyr Ser Ala His Leu Met Gly Ala
 35 40 45
 Gly Val His Thr Ser Arg Val Ile Arg Asn Ser Lys Arg Ile Gly Glu
 50 55 60
 Ala Tyr Gly Val Asp Val Lys Leu Ser Val Phe His Lys Asn Ile Ile
 65 70 75 80
 Leu Thr Ile Ile Asp Asn Glu Thr Arg Glu Ala Cys Asn Glu Val Ile
 85 90 95
 Asp Ile Pro Pro His Pro Ile Ser Phe Glu His Asn Ser Glu Leu Ser
 100 105 110
 Ala Leu Ser Trp Glu Val Tyr Asp Lys His Leu Ser Leu His Glu Leu
 115 120 125
 Ser Asp Lys Phe Asn Lys Ile Ile Ser Ala Pro Lys Ile Asp Pro Leu
 130 135 140
 Phe Val Leu Leu Leu Val Gly Phe Ala Asn Ala Ser Phe Cys Lys Leu
 145 150 155 160
 Phe Gly Gly Asp Ile Ile Ser Met Gly Ile Val Phe Ser Ala Thr Ile
 165 170 175
 Thr Gly Leu Phe Leu Lys Gln Gln Met Gln Lys Lys Lys Ile Asn His
 180 185 190
 Tyr Ile Ile Phe Ile Val Ser Ala Phe Val Ala Ser Leu Cys Ala Ser
 195 200 205
 Thr Ala Leu Ile Phe Asp Thr Thr Ser Glu Ile Ala Leu Ala Thr Ser
 210 215 220

Val	Leu	Tyr	Leu	Val	Pro	Gly	Val	Pro	Leu	Ile	Asn	Gly	Val	Ile	Asp
225					230					235					240
Ile	Val	Glu	Gly	Tyr	Ile	Leu	Thr	Gly	Phe	Ala	Arg	Leu	Thr	Glu	Ala
				245					250					255	
Ala	Leu	Leu	Ile	Val	Ser	Ile	Ala	Ile	Gly	Leu	Ser	Phe	Thr	Leu	Leu
			260					265					270		
Met	Val	Lys	Asn	Ser	Leu	Ile									
		275													

<210> 5906

<211> 580

<212> PRT

<213> B.fragilis

<400> 5906

Ser	Pro	Leu	Arg	Gly	Tyr	Val	Asn	Lys	Tyr	Ser	Ile	Asn	Ile	Thr	Phe
1				5					10				15		
Tyr	Thr	Met	Glu	Leu	Leu	Arg	Asn	Leu	Phe	Glu	Gly	Tyr	Pro	Asn	Leu
			20					25					30		
Trp	Gly	Gly	Gly	Val	Ala	His	Ser	Val	Leu	Ile	Leu	Ser	Leu	Val	Ile
		35					40					45			
Ala	Phe	Gly	Ile	Met	Leu	Gly	Lys	Ile	Lys	Val	Ala	Gly	Ile	Ser	Leu
	50					55					60				
Gly	Val	Thr	Trp	Ile	Leu	Phe	Val	Gly	Ile	Val	Phe	Gly	His	Phe	Asn
65				70					75					80	
Leu	Asn	Leu	Asn	Glu	His	Leu	Leu	His	Phe	Leu	Lys	Glu	Phe	Gly	Leu
			85					90					95		
Ile	Leu	Phe	Val	Tyr	Ser	Ile	Gly	Leu	Gln	Val	Gly	Pro	Gly	Phe	Phe
			100				105					110			
Ser	Ala	Phe	Lys	Lys	Gly	Gly	Phe	Thr	Leu	Asn	Met	Leu	Ala	Met	Ile
		115				120					125				
Val	Val	Phe	Ala	Gly	Val	Ile	Ile	Thr	Leu	Ala	Leu	His	Phe	Ile	Thr
	130					135					140				
Gly	Ile	Pro	Ile	Thr	Thr	Met	Val	Gly	Ile	Leu	Ser	Gly	Ala	Val	Thr
145				150					155					160	
Asn	Thr	Pro	Gly	Leu	Gly	Ala	Ala	Gln	Gln	Ala	Asn	Ser	Asp	Leu	Thr
			165					170					175		
Gly	Ile	Asp	Ala	Pro	Glu	Ile	Ala	Leu	Gly	Tyr	Ala	Val	Ala	Tyr	Pro
		180					185					190			
Leu	Gly	Val	Val	Gly	Cys	Ile	Met	Ser	Leu	Leu	Gly	Leu	Lys	Tyr	Leu
		195				200					205				
Phe	Arg	Ile	Asn	Thr	Lys	Gln	Glu	Glu	Ala	Glu	Ala	Glu	Gln	Gly	Leu
	210				215					220					
Gly	His	Leu	Gln	Glu	Leu	Thr	Val	Arg	Pro	Val	Ser	Leu	Glu	Val	Arg
225				230					235					240	
Asn	Glu	Ala	Leu	His	Gly	Lys	Arg	Ile	Lys	Asp	Ile	Arg	Pro	Leu	Val
			245					250					255		
Asn	Arg	Asn	Phe	Val	Val	Ser	Arg	Ile	Arg	His	Leu	Asn	Gly	Lys	Lys
		260				265						270			
Glu	Ser	Glu	Leu	Val	Asn	Ser	Asp	Thr	Glu	Leu	His	Leu	Gly	Asp	Glu
		275				280					285				
Ile	Leu	Val	Ile	Ala	Thr	Pro	Ile	Asp	Ile	Glu	Ala	Ile	Thr	Ala	Phe
	290				295						300				
Phe	Gly	Lys	Pro	Ile	Glu	Val	Glu	Trp	Glu	Gln	Leu	Asn	Lys	Glu	Leu
305				310					315					320	
Ile	Ser	Arg	Arg	Ile	Leu	Ile	Thr	Lys	Pro	Glu	Leu	Asn	Gly	Lys	Thr
			325					330					335		
Leu	Ala	Gln	Leu	Lys	Ile	Arg	Asn	Asn	Phe	Gly	Ala	Ser	Val	Thr	Arg
			340				345						350		

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Val Asn Arg Ser Gly Val Asp Leu Val Ala Ser Pro Gln Leu Gln Leu
 355 360 365
 Gln Met Gly Asp Arg Val Thr Ile Val Gly Ser Glu Leu Ala Val Ser
 370 375 380
 His Ala Glu Lys Val Leu Gly Asn Ser Met Lys Arg Leu Asn His Pro
 385 390 395 400
 Asn Leu Ile Pro Ile Phe Leu Gly Ile Ala Leu Gly Cys Ile Leu Gly
 405 410 415
 Ser Ile Pro Phe Met Phe Pro Gly Ile Pro Gln Pro Val Lys Leu Gly
 420 425 430
 Leu Ala Gly Gly Pro Leu Ile Val Ser Ile Leu Ile Ser Arg Phe Gly
 435 440 445
 Pro Gln Tyr Lys Leu Ile Thr Tyr Thr Thr Met Ser Ala Asn Leu Met
 450 455 460
 Ile Arg Glu Ile Gly Ile Ser Leu Phe Leu Ala Cys Val Gly Leu Gly
 465 470 475 480
 Ala Gly Asp Gly Phe Val Glu Thr Ile Ile His Glu Gly Gly Tyr Val
 485 490 495
 Trp Ile Ala Tyr Gly Met Ile Ile Thr Ile Val Pro Leu Leu Leu Ala
 500 505 510
 Gly Phe Ile Gly Arg Tyr Ala Phe Lys Leu Asn Tyr Tyr Thr Leu Ile
 515 520 525
 Gly Val Leu Ala Gly Ser Thr Thr Asn Pro Pro Ala Leu Ala Tyr Ser
 530 535 540
 Asn Asp Leu Thr Ser Cys Asp Ala Pro Ala Val Gly Tyr Ala Thr Val
 545 550 555 560
 Tyr Pro Leu Thr Met Phe Leu Arg Val Leu Thr Ala Gln Leu Leu Ile
 565 570 575
 Leu Ser Leu Gly
 580

<210> 5907
 <211> 191
 <212> PRT
 <213> B.fragilis

<400> 5907

Met Met Lys Arg Ile Tyr Thr Arg Thr Gly Asp Arg Gly Thr Thr Gly
 1 5 10 15
 Ile His Gly Gly Glu Arg Val Glu Lys Asp Asp Ile Arg Ile Glu Ala
 20 25 30
 Asn Gly Thr Ile Asp Glu Leu Asn Ala Val Ile Gly Ile Ile Arg Ser
 35 40 45
 Leu Leu Pro Gln Glu His Asp Trp Gln Lys Leu Leu His His Leu Gln
 50 55 60
 Arg Glu Leu Met Val Val Met Ser His Val Ala Thr Pro Ser Ala Ile
 65 70 75 80
 Arg Asp Lys Asn Pro Asn Val Leu Ser Pro Gly Leu Ala Ala Phe Cys
 85 90 95
 Glu Gln Glu Met Asp Thr Met Thr Ala Gly Leu Lys Glu Asn Gly Tyr
 100 105 110
 Phe Leu Leu Pro Gly Gly Thr Pro Val Ser Ala Gln Leu Gln Phe Ala
 115 120 125
 Arg Thr Val Ala Arg Arg Ala Glu Arg Arg Leu Trp Thr Leu Asn Arg
 130 135 140
 Gln Asp Ala Val Pro Glu Asp Ile Leu Ser Phe Ile Asn Arg Leu Ser
 145 150 155 160
 Asp Leu Phe Phe Val Met Ala Arg Phe Asp Met Gln Gln Gln Asp Trp
 165 170 175

Pro Glu Glu Arg Trp Gln Ala Phe Ala Tyr Lys Thr Lys Lys Lys
 180 185 190

<210> 5908
 <211> 260
 <212> PRT
 <213> B.fragilis

<400> 5908

Gln Asn Val Arg Arg Arg Met Cys Phe Arg Ser Val Met Arg Tyr Thr
 1 5 10 15
 Ser Phe Ser Thr Pro Ala Thr Val Pro Ile Leu Asp Gly Tyr Arg Ile
 20 25 30
 Ser Ala Asp His Ala Val Ser Ala Leu His Thr Asp Glu Thr Glu Val
 35 40 45
 Ala Arg Leu Tyr Arg Arg Leu Leu Arg Ser Thr Val Ser Ser Lys Arg
 50 55 60
 Thr Val Phe Leu Pro Gly Asn Ser Tyr Thr Asn Val Tyr Ile Val Met
 65 70 75 80
 Glu Val Ile Leu Ile Arg His Thr Ser Val Asp Val Pro Lys Gly Val
 85 90 95
 Cys Tyr Gly Gln Thr Asp Val Pro Leu Arg Asp Ser Phe Glu Glu Glu
 100 105 110
 Ala Ser Ile Thr Ala Gln Gln Leu Gln Asn Asp Val Phe Asp Ala Val
 115 120 125
 Phe Thr Ser Pro Leu Ser Arg Cys Thr Arg Leu Ala Asp His Cys Gly
 130 135 140
 Tyr Pro Asp Ala Ile Arg Asp Ala Arg Leu Lys Glu Leu Asn Phe Gly
 145 150 155 160
 Glu Trp Glu Met Gln Glu Phe Asp Lys Ile Cys Asp Pro Arg Leu Glu
 165 170 175
 Glu Trp Tyr Asn Asp Tyr Phe His Val Ala Ala Thr Gly Gly Glu Ser
 180 185 190
 Phe Met Met Gln Leu Gln Arg Val Ser Glu Phe Leu Asn Glu Val Ser
 195 200 205
 Gly Lys Glu Tyr Lys Arg Ile Ala Val Phe Ala His Gly Gly Val Leu
 210 215 220
 Ile Cys Ala Gln Ile Tyr Ala Gly Ile Leu Arg Met Glu Asp Ala Phe
 225 230 235 240
 Asn Ala Leu Thr Pro Tyr Gly Gly Val Val Arg Leu Gln Leu Asn Ser
 245 250 255
 Lys Thr Glu Glu
 260

<210> 5909
 <211> 325
 <212> PRT
 <213> B.fragilis

<400> 5909

Asp Arg Glu Ser Met Asp Gly Met Phe Phe Trp Tyr Ile Ser Leu Val
 1 5 10 15
 Tyr Phe Cys Arg Leu Phe Pro Leu Pro Leu Ala Trp Leu Phe Asp Arg
 20 25 30
 Trp Gln Gly Asp Pro Ser Trp Leu Pro His Pro Val Val Gly Phe Gly
 35 40 45
 Lys Leu Ile Ala Trp Gly Glu Lys Cys Leu Asn Ala Gly Arg Ala Arg
 50 55 60
 Val Trp Lys Gly Gly Met Met Ser Val Ala Leu Ile Val Gly Val Tyr

65					70					75				80	
Phe	Phe	Thr	Phe	Leu	Phe	Phe	Lys	Val	Ile	Gly	Glu	Tyr	Ser	Ile	Ile
				85					90					95	
Leu	Thr	Ala	Leu	Ile	Gln	Thr	Leu	Leu	Ile	Phe	Cys	Cys	Leu	Ala	Gly
			100					105					110		
Thr	Thr	Leu	Ile	Arg	Glu	Val	Arg	Met	Val	Phe	Glu	Ala	Val	Asp	Arg
		115					120					125			
Ser	Leu	Asp	Glu	Gly	Arg	Lys	Gln	Val	Ala	Arg	Ile	Val	Gly	Arg	Asp
	130					135					140				
Thr	Ser	Ala	Leu	Ser	Ala	Gln	Glu	Val	Arg	Thr	Ala	Ala	Leu	Glu	Thr
145					150					155					160
Leu	Ala	Glu	Asn	Leu	Ser	Asp	Gly	Val	Ile	Ala	Pro	Leu	Phe	Trp	Tyr
			165						170					175	
Ala	Val	Leu	Gly	Val	Pro	Gly	Met	Met	Ala	Tyr	Lys	Met	Val	Asn	Thr
		180					185						190		
Leu	Asp	Ser	Met	Ile	Gly	Tyr	Arg	Asn	Glu	Arg	Tyr	Arg	Gln	Phe	Gly
	195						200					205			
Cys	Ile	Ala	Ala	Arg	Ile	Asp	Asp	Val	Ala	Asn	Tyr	Ile	Leu	Ala	Arg
	210					215					220				
Leu	Thr	Ala	Leu	Leu	Met	Ile	Leu	Val	Thr	Glu	Arg	Phe	Ser	Leu	Leu
225					230					235					240
Arg	Phe	Val	Gly	Lys	Tyr	Gly	Ser	Arg	His	Ala	Ser	Pro	Asn	Ser	Gly
			245						250					255	
Ile	Pro	Glu	Ala	Ala	Leu	Ala	Gly	Ile	Leu	Asn	Cys	Arg	Phe	Gly	Gly
			260					265					270		
Pro	His	Tyr	Tyr	Phe	Gly	Glu	Glu	Val	Trp	Lys	Pro	Phe	Ile	Gly	Asn
		275					280					285			
Asn	Glu	Arg	Ala	Leu	Thr	Thr	Glu	Asp	Met	Lys	Lys	Ala	Val	Cys	Val
	290					295					300				
Asn	Arg	Gln	Ala	Glu	Val	Leu	Met	Val	Val	Leu	Val	Trp	Leu	Thr	Ile
305					310					315					320
Leu	Leu	Ser	Leu	Ser											
				325											

<210> 5910
 <211> 132
 <212> PRT
 <213> B.fragilis

<400> 5910
 Phe Ile Ile Phe Val Phe Val Leu Lys Glu Thr Arg Cys Ile Met Lys
 1 5 10 15
 Glu Pro Glu Lys Tyr Lys Gln Pro Glu Glu Glu Thr Thr Arg Leu Ser
 20 25 30
 Glu Pro Thr Val Ala Tyr Asn Ser Met Ala Tyr Leu Glu Leu Glu Ala
 35 40 45
 Glu Lys Ala Glu Leu Ile Arg Thr Ile Ala Asn Ile Asp Ser Lys Glu
 50 55 60
 Ile Ile Asp Lys Val Lys Gln Lys Leu His Asp Val Leu Gly Leu Asp
 65 70 75 80
 Lys Asn Arg Glu Thr Glu Pro Glu Cys Lys Lys Tyr Ile Leu Ala Asn
 85 90 95
 Ile Lys Glu Ala Phe Cys Glu Gln Glu Arg Val Arg Thr Gly Glu Ser
 100 105 110
 Lys Ser Arg Pro Ala Glu Glu Leu Ala Glu Leu Ile Arg Glu Arg
 115 120 125
 Glu Gly Asn Asp
 130

<210> 5911
 <211> 1084
 <212> PRT
 <213> B.fragilis

<400> 5911

Ile	Asn	Leu	Ile	Asp	Asn	His	Met	Asn	Lys	Lys	Leu	Ile	Leu	Ser	Ile
1				5					10					15	
Phe	Val	Leu	Ala	Gly	Ala	Pro	Val	Leu	Leu	Ser	Ala	Ala	Gly	Glu	Ala
			20					25					30		
Arg	Leu	Leu	Arg	Phe	Pro	Ala	Thr	Asn	Gly	Asn	Glu	Ile	Val	Phe	Ser
		35					40					45			
Tyr	Ala	Gly	Asp	Leu	Tyr	Lys	Val	Pro	Ala	Ser	Gly	Gly	Glu	Ala	Gln
	50					55					60				
Arg	Leu	Thr	Ser	His	Val	Gly	Tyr	Glu	Met	Phe	Pro	Arg	Phe	Ser	Pro
65					70					75					80
Asp	Gly	Lys	Thr	Ile	Ala	Phe	Thr	Gly	Gln	Tyr	Asp	Gly	Asn	Thr	Glu
				85					90					95	
Val	Tyr	Thr	Met	Pro	Ala	Thr	Gly	Gly	Glu	Pro	Leu	Arg	Ile	Thr	Tyr
			100					105					110		
Thr	Ala	Thr	Asn	Ser	Arg	Asp	Asp	Leu	Gly	Asp	Arg	Met	Gly	Pro	Asn
			115					120					125		
Asn	Ile	Val	Met	Thr	Trp	Thr	Pro	Asp	Gly	Gln	Arg	Ile	Val	Tyr	Arg
	130					135					140				
Asn	Arg	Ile	Ser	Asp	Gly	Phe	Ser	Gly	Lys	Leu	Phe	Thr	Val	Asp	Lys
145					150					155					160
Glu	Gly	Gly	Leu	Ser	Glu	Val	Ile	Pro	Leu	Pro	Glu	Gly	Gly	Phe	Cys
				165					170					175	
Ser	Tyr	Ser	Pro	Asp	Gly	Lys	Gln	Leu	Ala	Tyr	Asn	Arg	Val	Met	Arg
			180					185					190		
Glu	Phe	Arg	Thr	Trp	Lys	Tyr	Tyr	Lys	Gly	Gly	Met	Ala	Asp	Asp	Ile
	195					200						205			
Trp	Val	Tyr	Asn	Pro	Gly	Asn	Lys	Thr	Val	Glu	Asn	Val	Thr	Asn	Asn
	210					215					220				
Val	Ala	Gln	Asp	Ile	Phe	Pro	Met	Trp	Ile	Gly	Asp	Glu	Ile	Phe	Phe
225					230					235					240
Leu	Ser	Asp	Arg	Asp	Arg	Ile	Met	Asn	Ile	Phe	Ala	Tyr	Asn	Thr	Lys
				245					250					255	
Thr	Lys	Gln	Thr	Val	Lys	Val	Thr	Asn	Phe	Thr	Glu	Tyr	Asp	Val	Lys
			260					265					270		
Phe	Pro	Ser	Val	His	Gly	Asn	Thr	Ile	Val	Phe	Glu	Asn	Gly	Gly	Tyr
			275				280					285			
Ile	Tyr	Lys	Met	Asp	Ala	Ala	Ala	Arg	Lys	Ala	Glu	Lys	Val	Asn	Ile
	290					295					300				
Thr	Leu	Ala	Ser	Asp	Asn	Ile	Tyr	Ala	Arg	Thr	Asp	Leu	Lys	Glu	Gly
305					310					315					320
Ala	Asn	Tyr	Val	Thr	Ala	Ala	Ser	Leu	Ser	Pro	Asp	Gly	Ala	Arg	Met
				325					330					335	
Val	Val	Thr	Ser	Arg	Gly	Glu	Val	Phe	Asn	Leu	Pro	Val	Glu	Lys	Gly
			340					345					350		
Val	Thr	Lys	Asn	Ile	Thr	Arg	Ser	Pro	Gly	Ala	His	Asp	Arg	Asp	Ala
	355						360					365			
Gln	Trp	Ser	Pro	Asp	Gly	Thr	Gln	Ile	Ala	Tyr	Ile	Ser	Asp	Ala	Thr
	370					375					380				
Gly	Glu	Thr	Glu	Leu	Tyr	Leu	Gln	Asn	Ala	Ala	Gly	Gly	Glu	Pro	Met
385					390					395					400
Gln	Phe	Thr	His	Lys	Asn	Asp	Thr	Tyr	Ile	Arg	Asp	Phe	Lys	Trp	Ser
				405					410					415	
Pro	Asp	Ser	Lys	Lys	Ile	Val	Tyr	Met	Asp	Arg	Lys	Asn	Arg	Val	Asn

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

420 425 430
 Leu Leu Asp Val Ala Ser Gly Lys Val Ser Leu Leu Leu Gln Asp Pro
 435 440 445
 Val Gly Val Pro Gly Gly Val Thr Phe Ser Pro Asp Ser Glu Trp Leu
 450 455 460
 Thr Tyr Thr Arg Met Gly Lys Asn Glu Ile Asn Val Val Tyr Val Tyr
 465 470 475 480
 Asn Ile Ala Glu Lys Lys Glu Tyr Pro Val Thr Asp Lys Trp Tyr Asn
 485 490 495
 Ser Ser Ser Pro Val Phe Ser Ala Asp Gly Lys Tyr Leu Ile Phe Ser
 500 505 510
 Ser Ala Arg Asp Phe Asn Pro Thr Tyr Gly Ser Leu Glu Trp Asn His
 515 520 525
 Val Tyr Asn Asn Met Tyr Gly Val Tyr Ile Ala Leu Leu Ser Lys Asp
 530 535 540
 Thr Ser Ser Pro Phe Met Gln Lys Asp Ala Glu Val Ala Val Ser Asn
 545 550 555 560
 Ala Thr Pro Lys Ser Gly Asp Lys Lys Pro Ala Asp Lys Lys Glu Val
 565 570 575
 Ala Asp Ala Ser Leu Val Lys Phe Asp Pro Asp Gly Ile Thr Asp Arg
 580 585 590
 Ile Val Arg Leu Pro Leu Ser Pro Ser Tyr Tyr Gly Asn Phe Tyr Ser
 595 600 605
 Asp Gly Asn Lys Val Tyr Tyr Trp Gly Arg Gly Gly Thr Lys Met Tyr
 610 615 620
 Asp Leu Ala Ser Gln Lys Glu Glu Ser Ile Ala Asp Gly Ala Ser Met
 625 630 635 640
 Asp Val Thr Tyr Asp Gly Lys Lys Ala Leu Phe Phe Lys Gly Arg Gln
 645 650 655
 Ile Tyr Val Thr Asn Leu Pro Ser Gly Lys Thr Glu Leu Thr Ala Pro
 660 665 670
 Val Asp Leu Ser Asn Met Lys Ile Thr Val Asp Tyr Pro Lys Glu Trp
 675 680 685
 Ala Gln Ile Phe Asp Glu Ala Trp Arg Ala Tyr Arg Asp Gly Phe Tyr
 690 695 700
 Gln Glu Ser Met His Gly Val Asp Trp Lys Ala Ile Lys Glu Lys Tyr
 705 710 715 720
 Ala Val Leu Leu Pro Tyr Val Lys Thr Arg Leu Asp Leu Asn Tyr Ile
 725 730 735
 Ile Gly Glu Met Ile Gly Glu Leu Asn Cys Gly His Ala Tyr Val Asn
 740 745 750
 Pro Gly Glu Thr Glu Gln Pro Lys Arg Ile Asn Thr Gly Leu Leu Gly
 755 760 765
 Ala Glu Ile Thr Arg Asp Lys Ser Gly Phe Phe Arg Leu Glu Lys Ile
 770 775 780
 Phe Pro Gly Ala Ser Trp Ser Lys Glu Leu Arg Ser Pro Leu Thr Glu
 785 790 795 800
 Pro Gly Val Asp Val Lys Val Gly Glu Tyr Ile Val Ala Ile Asp Gly
 805 810 815
 Val Pro Thr Asn Thr Val Lys Asp Met Tyr Ser Leu Leu Val Gly Lys
 820 825 830
 Ala Glu Ile Pro Thr Glu Ile Ser Leu Asn Ala Lys Pro Gln Leu Ser
 835 840 845
 Gly Ala Arg Lys Val Val Ile Ser Pro Leu Ala Asn Glu Tyr Pro Leu
 850 855 860
 Ile His Tyr Asn Trp Val Gln Asp Asn Ile Lys Lys Val Asp Gln Ala
 865 870 875 880
 Ser Asn Gly Arg Ile Gly Tyr Ile Tyr Ile Pro Asp Met Gly Pro Glu
 885 890 895

Gly Leu Asn Glu Phe Ala Arg Tyr Phe Tyr Pro Gln Leu Asp Lys Glu
 900 905 910
 Gly Leu Ile Ile Asp Asp Arg Ala Asn Gly Gly Gly Asn Val Ser Pro
 915 920 925
 Met Ile Leu Glu Arg Leu Ser Arg Glu Pro Tyr Arg Leu Thr Met Gly
 930 935 940
 Arg Gly Thr Ser His Val Gly Thr Val Pro Asp Ala Val Gln Val Gly
 945 950 955 960
 Pro Lys Val Cys Leu Ile Asn Lys Tyr Ser Ala Ser Asp Gly Asp Leu
 965 970 975
 Phe Pro Trp Gly Phe Arg Ala Leu Gly Leu Gly Lys Leu Ile Gly Thr
 980 985 990
 Arg Thr Trp Gly Gly Ile Val Gly Ile Ser Gly Ser Leu Pro Tyr Met
 995 1000 1005
 Asp Gly Thr Asp Ile Arg Val Pro Phe Phe Thr Ser Tyr Asp Pro Lys
 1010 1015 1020
 Thr Gly Lys Trp Ile Ile Glu Asn His Gly Val Asp Pro Asp Ile Leu
 1025 1030 1035 1040
 Ile Asp Asn Asp Pro Val Lys Glu Trp Asn Gly Glu Asp Gln Gln Leu
 1045 1050 1055
 Asn Arg Ala Ile Glu Glu Val Met Lys Gln Leu Lys Asp Arg Lys Pro
 1060 1065 1070
 Leu Pro Pro Val Pro Ala Pro Arg Asp Phe Ser Lys
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<210> 5912

<211> 448

<212> PRT

<213> B.fragilis

<400> 5912

Lys Pro Thr Ile Met Glu Cys Arg Met Ile Ser Gln Phe Leu Ile Ala
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 Ala Pro Ser Ser Gly Ser Gly Lys Thr Thr Val Ser Arg Gly Leu Met
 20 25 30
 Ala Leu Leu Ile Lys Lys Gly Leu Lys Val Gln Pro Phe Lys Cys Gly
 35 40 45
 Pro Asp Tyr Ile Asp Thr Lys Tyr His Thr Ala Val Cys Arg Arg Pro
 50 55 60
 Ser Ile Asn Leu Asp Thr Phe Met Ala Ser Ala Gly His Val Lys Glu
 65 70 75 80
 Leu Tyr Ala Arg Tyr Ala Thr Gly Ala Asp Ala Cys Ile Thr Glu Gly
 85 90 95
 Met Met Gly Met Tyr Asp Gly Tyr Asp Arg Asp Arg Gly Ser Ser Ala
 100 105 110
 Glu Val Ala Gly Leu Leu Asn Leu Pro Val Ile Leu Val Val Asp Ala
 115 120 125
 Lys Ser Ala Ala Tyr Ser Val Ala Pro Leu Leu Ser Gly Phe Ile His
 130 135 140
 Phe Arg Pro Glu Ile Arg Ile Ala Gly Val Ile Phe Asn Arg Val Gly
 145 150 155 160
 Ser Pro Arg His Tyr Glu Met Leu Gln Glu Val Cys Thr Glu Leu Gly
 165 170 175
 Ile Thr Cys Leu Gly Tyr Leu Pro Lys Gln Glu Ser Leu Val Gln Glu
 180 185 190
 Ser Arg Tyr Leu Gly Leu Asp Phe Ser His Ser Lys Gly Thr Asp Ala
 195 200 205
 Leu Glu Glu Leu Thr Gly Leu Met Glu Lys Tyr Ile Asp Tyr Asn Arg
 210 215 220

Leu Leu Glu Glu Thr Lys Leu Pro Ala Pro Ile Pro Pro Val Ser Asn
 225 230 235 240
 Ile Ser Leu Gln Glu Asp Leu Lys Ile Ser Val Ala Cys Asn Ser Glu
 245 250 255
 Ser Phe Ser Phe Ile Tyr Gln Glu His Leu Asp Val Leu Cys Arg Leu
 260 265 270
 Gly Thr Val Ile Leu Phe Asn Pro Glu Asp Asn Arg Pro Leu Pro Glu
 275 280 285
 Gly Thr Asp Leu Leu Tyr Leu Pro Gly Gly Tyr Pro Glu Lys His Tyr
 290 295 300
 Glu Lys Leu Arg Gln Ala Trp Gln Arg Met Gln Ser Ile Arg Asn Tyr
 305 310 315 320
 Ala Glu Ser Gly Gly Arg Val Leu Ala Glu Cys Gly Gly Met Ile Tyr
 325 330 335
 Leu Ser Lys Gly Ile Leu Leu Asp Arg Ser Glu His Ser Asp Ser Glu
 340 345 350
 Val Gly Leu Gln Ala Gly Val Leu Pro Phe Phe Ile Ser Asn Arg Lys
 355 360 365
 Ala Asp Arg Arg Leu Thr Leu Gly Tyr Arg Gln Phe Asp Tyr Asn Gly
 370 375 380
 Gln His Leu Arg Gly His Glu Phe His Tyr Thr Gln Phe Glu Pro Lys
 385 390 395 400
 Pro Glu Glu Ser Leu Glu Ser Val Thr Gln Val Tyr Asn Ala Lys Arg
 405 410 415
 Met Pro Val Ser Thr Pro Val Phe Arg Tyr Lys Asn Val Ile Ala Ser
 420 425 430
 Tyr Thr His Leu Tyr Trp Gly Glu Ile Asp Leu Leu Lys Leu Phe Glu
 435 440 445

<210> 5913

<211> 821

<212> PRT

<213> B.fragilis

<400> 5913

Leu Phe Pro Phe Gln Asn Lys Ala Asn Met Ile Ile Ser Lys Asn Pro
 1 5 10 15
 Leu Gly Asp Ile Ala Lys Leu Asn Arg Ile Cys Ala Ser Ala Gln Ile
 20 25 30
 Gly Trp Trp Glu Val Asn Phe Thr Thr Gly Lys Cys Phe Ile Ser Glu
 35 40 45
 Thr Leu Leu Lys Ser Leu Glu Val Ser Ser Val Trp Leu Asp Ile Asp
 50 55 60
 Glu Leu Met Ser Thr Val Arg Gln Asp Tyr Arg Lys Arg Ile Thr Asp
 65 70 75 80
 Glu Phe Thr Ser Ile Pro Arg Lys Gly Val Phe Glu Gln Thr Phe Pro
 85 90 95
 Val Thr Ser Gly Arg Gly Asn Val Phe Trp Ile His Cys Ala Leu Ser
 100 105 110
 Met Glu Glu Glu Asn Glu Glu Gly Gln Leu Ile Ala Thr Gly Tyr Gly
 115 120 125
 Gln Arg Ile Glu Ser Pro Glu Thr Gln Gly Tyr Gln Cys Ala Trp Asn
 130 135 140
 Gln Arg Ile Asn Asn Leu Tyr Cys Gln Asn Ser Ile Ala Asn Ser
 145 150 155 160
 Leu Leu Lys Leu Leu Ser Asn Asp Thr Gly Asp Glu Leu Phe Glu Glu
 165 170 175
 Met Leu Ala Asp Ile Leu Tyr Phe Phe Lys Gly Ala Arg Val Tyr Ile
 180 185 190

Val	Arg	Tyr	Asn	Trp	Lys	Asn	Gly	Asn	Gln	Ser	Cys	Leu	Tyr	Glu	Val
	195						200					205			
Ala	Ala	Cys	Asn	Val	Ile	Thr	Leu	Lys	Glu	Lys	Leu	Gln	Asn	Ile	Cys
	210					215					220				
Ser	Glu	Asp	Ala	Pro	Trp	Phe	Tyr	Gln	Gln	Ile	His	Ala	Asn	Arg	Pro
225					230					235					240
Val	Ile	Leu	Asn	Ser	Pro	Asp	Glu	Leu	Pro	Pro	Leu	Ala	Val	Arg	Asp
			245						250					255	
Arg	Glu	Val	Leu	Ala	Glu	Asn	Gly	Thr	Asn	Ser	Met	Met	Leu	Ala	Pro
		260					265						270		
Leu	Met	Arg	Glu	Glu	Gly	Val	Trp	Gly	Tyr	Met	Gly	Ile	Asp	Ile	Val
	275						280					285			
Asp	Gly	Tyr	Arg	Lys	Trp	Asn	Ser	Glu	Asp	Tyr	Gln	Trp	Phe	Ser	Ser
	290					295					300				
Leu	Ala	Asn	Ile	Ile	Ser	Ile	Cys	Met	Glu	Leu	Arg	Met	Ile	Lys	Glu
305					310					315					320
Arg	Val	Met	His	Ser	Glu	Lys	Leu	Phe	His	Asp	Ile	Phe	Thr	Asn	Ile
			325						330					335	
Pro	Val	Gly	Leu	Glu	Leu	Tyr	Asn	Lys	Glu	Gly	Met	Leu	Leu	Asp	Cys
		340						345					350		
Asn	Asn	Arg	Asn	Leu	Glu	Ile	Phe	Gly	Val	Gly	Asp	Lys	Asn	Arg	Ile
		355					360					365			
Ile	Gly	Leu	Asn	Leu	Phe	Glu	Ser	Pro	Asn	Met	Thr	Arg	Asp	Ile	His
	370					375					380				
Glu	Ser	Leu	Arg	Ala	Gly	Arg	Pro	Gly	Thr	Phe	His	Leu	Lys	Tyr	Asp
385					390					395					400
Phe	Asp	Glu	Glu	Arg	Arg	Leu	Phe	Gln	Ser	Glu	Arg	Arg	Gly	Val	Met
			405						410					415	
Asp	Leu	Asp	Ile	Arg	Ser	Leu	Met	Leu	Tyr	Asp	Ala	Glu	Asp	Asn	Leu
		420						425					430		
Ser	Asn	Tyr	Leu	Leu	Val	Asn	Ile	Asp	Asn	Thr	Glu	Arg	Asn	Asn	Ala
		435					440					445			
Leu	Ser	Lys	Val	His	Asp	Phe	Glu	Asn	Phe	Phe	Ser	Ile	Ile	Ser	Asp
	450					455					460				
Tyr	Ser	Lys	Val	Gly	Tyr	Ala	Lys	Ile	Asn	Leu	Leu	Asp	His	Thr	Gly
465					470					475					480
Phe	Ala	Val	Arg	Gln	Trp	Tyr	Arg	Asn	Leu	Gly	Glu	Ser	His	Asp	Thr
			485						490					495	
Pro	Leu	Ala	Asp	Ile	Ile	Gly	Ile	Phe	Ser	His	Met	His	Pro	Asp	Asp
		500						505					510		
Arg	Lys	Ser	Val	Leu	Asp	Phe	Tyr	Glu	Lys	Ala	Lys	Ala	Gly	Thr	Glu
		515					520					525			
Arg	Phe	Phe	Asp	Gly	Asp	Leu	Arg	Ile	Arg	Pro	Ala	Asp	Gly	Ala	Asp
	530					535					540				
Arg	Trp	Asn	Trp	Ile	His	Lys	Ser	Ser	Met	Val	Thr	Ala	Tyr	Gln	Ser
545					550					555					560
Pro	Asn	Pro	Arg	Leu	Glu	Leu	Val	Glu	Val	Asn	Tyr	Asp	Ile	Thr	Val
			565						570					575	
Gln	Lys	Glu	Thr	Glu	Ala	Glu	Leu	Arg	Ala	Ala	Arg	Asp	Lys	Ala	Glu
			580					585					590		
Glu	Ser	Asn	Arg	Leu	Lys	Ser	Ala	Phe	Leu	Ala	Asn	Ile	Ser	His	Glu
		595					600					605			
Ile	Arg	Thr	Pro	Leu	Asn	Ala	Ile	Val	Gly	Phe	Ser	Asp	Leu	Leu	Met
	610					615					620				
Thr	Val	Asp	Asp	Pro	Ala	Glu	Gln	Glu	Glu	Phe	Arg	Arg	Thr	Ile	Gln
625					630					635					640
Lys	Asn	Asn	Thr	Leu	Leu	Leu	Gln	Leu	Phe	Ser	Asp	Ile	Ile	Asp	Leu
			645						650					655	
Ser	Lys	Ile	Asp	Ala	Gly	Ser	Phe	Glu	Tyr	Met	Pro	Lys	Pro	Val	Cys

195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605 610 615 620 625 630 635 640 645 650 655

660	665	670
Leu Tyr Gln Phe Cys Ala Met Met Val Gln Lys Met Arg Asn Lys Val		
675	680	685
Pro Glu Gly Val Glu Leu Gln Ile Asp Glu Asp Ser Pro Leu Asp Thr		
690	695	700
Trp Phe Ser Ala Asp Ser Gly Tyr Leu Asn Gln Val Val Thr Asn Phe		
705	710	715
Met Ser Asn Ala Ile Lys Phe Thr His Arg Gly Thr Ile Thr Val Gly		
	725	730
Tyr Arg Ile Asp Ala Arg Gln Gln Leu Glu Met Phe Val Glu Asp Thr		
	740	745
Gly Ile Gly Ile Ser Ile Glu Asn Gln Glu Ala Val Phe Asp Arg Phe		
	755	760
Met Lys Val Asp Ser Phe Val Gln Gly Thr Gly Leu Gly Leu Pro Leu		
	770	775
Cys Lys Ser Ile Ile Glu Lys Met Gly Gly His Ile Gly Val Ile Ser		
785	790	795
Glu Leu Gly Lys Gly Ser Arg Phe Trp Phe Thr Leu Pro Ala Phe Ser		
	805	810
Cys Ile Pro Thr Arg		815
	820	

<210> 5914
 <211> 289
 <212> PRT
 <213> B.fragilis

<400> 5914

Gln Thr Met Ile Glu Gly His Gly Asp Asp Ser Tyr Lys Tyr Arg His		
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Pro Ile Arg Ser Asn Phe Ser Ser Asn Val Tyr Asn Lys Val Asn Leu		
	20	25
Asp Gly Leu Arg Ala His Leu Cys Gly Arg Ile Ser Ala Ile Ser Ala		
	35	40
Tyr Pro Glu Pro Glu Pro Tyr Thr Leu Glu Ala Arg Leu Ala Asp Arg		
	50	55
His Ala Leu Pro Ala Ala Ser Val Cys Val Thr Asn Gly Ala Thr Glu		
65	70	75
Ala Ile Tyr Leu Ile Ala Gln Thr Phe Arg Gly Thr Asn Thr Ala Ile		
	85	90
Leu Met Pro Thr Phe Ser Glu Tyr Ala Asp Ala Cys Arg Met His Gly		
	100	105
His Lys Val Thr Ser Leu Tyr Thr Leu Asp Ala Val Pro Glu Asp Val		
	115	120
His Met Val Trp Leu Cys Asn Pro Asn Asn Pro Thr Gly Glu Val Arg		
	130	135
Asp Lys Lys Tyr Leu Thr Glu Leu Ile Ala Lys His Pro Arg Val Cys		
145	150	155
Phe Val Ile Asp Gln Ser Tyr Glu Tyr Phe Thr Leu Lys Glu Leu Phe		
	165	170
Thr Ala Gln Glu Ala Ala Gly Phe Pro Asn Val Ile Leu Leu His Ser		
	180	185
Met Thr Lys Arg Tyr Ala Ile Pro Gly Leu Arg Leu Gly Tyr Val Thr		
	195	200
Ala His Pro Gly Leu Ile Gly Arg Leu Arg Thr Asn Arg Met Pro Trp		
	210	215
Ser Val Asn Gln Leu Ala Ile Glu Ala Gly Leu Tyr Leu Leu Ser Glu		
225	230	235
Gly Ile Pro Ala Gly Leu Ser Met Lys Asp Tyr Leu Ala Glu Cys Ala		

				245					250					255			
Arg	Leu	Lys	Ser	Ser	Leu	Glu	Ala	Ile	Gly	Gly	Leu	Glu	Val	Trp	Pro		
			260					265					270				
Thr	Asp	Thr	His	Phe	Met	Leu	Val	Cys	Leu	Arg	Phe	Gly	Lys	Ala	Ala		
		275					280					285					
Leu																	

<210> 5915
 <211> 103
 <212> PRT
 <213> B.fragilis

<400> 5915

Ala	Ser	Pro	Met	Arg	Phe	Glu	Leu	Arg	Ile	Thr	Arg	Glu	Val	Cys	Thr		
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Pro	Ala	Pro	Ile	Lys	Trp	Ala	Glu	Tyr	Pro	Ala	Met	Asn	Leu	Asp	Met		
			20					25					30				
Glu	Ile	Lys	Asp	Ser	Phe	Val	Val	Ile	Lys	Leu	Leu	Thr	Phe	Leu	Asn		
		35					40					45					
Arg	Ala	Gln	Lys	Tyr	Lys	Lys	Glu	Arg	Lys	Glu	Lys	Ala	His	Lys	Ser		
	50					55					60						
Phe	His	Phe	Thr	Arg	Leu	Ser	Leu	Ser	His	Cys	Leu	Ser	Leu	Leu	Leu		
65					70					75					80		
Phe	Arg	Thr	Gln	Pro	Asn	Glu	Arg	Ile	Asn	Asn	Cys	Ala	Val	Ser	Thr		
				85					90					95			
Arg	Arg	Asn	Ile	Val	Ser	Gly											
			100														

<210> 5916
 <211> 250
 <212> PRT
 <213> B.fragilis

<400> 5916

Asp	Leu	Pro	Met	Asn	Ile	Leu	Ala	Ala	Phe	Ile	Phe	Phe	Thr	Arg	Leu		
1				5					10					15			
Pro	Phe	Trp	Arg	Ile	Arg	Glu	Val	Pro	Ala	Glu	Cys	Phe	Lys	His	Val		
			20					25					30				
Val	Pro	Tyr	Trp	Pro	Leu	Ser	Gly	Trp	Leu	Thr	Gly	Gly	Ile	Met	Ala		
		35					40					45					
Gly	Val	Leu	Trp	Leu	Ser	Ala	Gln	Ile	Leu	Pro	Phe	Ser	Val	Ala	Val		
	50					55					60						
Leu	Leu	Ala	Leu	Ala	Ala	Arg	Leu	Leu	Ile	Thr	Gly	Ala	Leu	His	Glu		
65					70					75					80		
Asp	Gly	Leu	Ala	Asp	Phe	Phe	Asp	Gly	Phe	Gly	Gly	Gly	Thr	Asn	Arg		
				85					90					95			
Glu	Arg	Ile	Leu	Ser	Ile	Met	Lys	Asp	Ser	His	Ile	Gly	Ser	Tyr	Gly		
		100					105						110				
Val	Ile	Gly	Leu	Ile	Phe	Tyr	Phe	Leu	Leu	Leu	Trp	Ser	Leu	Leu	Met		
		115					120					125					
Ser	Leu	Pro	Leu	Ser	Phe	Ala	Cys	Ile	Thr	Leu	Ile	Ala	Gly	Asp	Thr		
	130					135						140					
Ile	Ser	Lys	Leu	Thr	Ser	Ser	Gln	Ile	Ile	Asn	Phe	Leu	Pro	Tyr	Ala		
145					150					155					160		
Arg	Lys	Glu	Glu	Glu	Ser	Lys	Ala	Lys	Val	Val	Tyr	Asn	Arg	Met	Ser		
				165					170					175			
Gly	Gly	Glu	Cys	Ala	Phe	Gly	Leu	Leu	Cys	Gly	Ile	Leu	Pro	Ser	Ala		
			180					185						190			

2620 5915 5916

Leu Leu Leu Pro Tyr Arg Tyr Trp Met Ala Ile Val Phe Pro Leu Ile
 195 200 205
 Met Leu Tyr Leu Leu Cys Thr Leu Met Lys Arg Lys Leu Gln Gly Tyr
 210 215 220
 Thr Gly Asp Cys Cys Gly Ala Leu Phe Leu Leu Ser Glu Leu Ser Phe
 225 230 235 240
 Tyr Leu Gly Ile Val Ile Leu Met Phe Ile
 245 250

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<400> 5917
 Tyr Phe Ile Phe Pro Phe Pro Asp Ala Lys Tyr Cys Ala Ile Ala Met
 1 5 10 15
 Gly Ile Ser Glu Thr Ile Phe Ile Phe Ala Trp Leu Tyr Lys Ile Lys
 20 25 30
 Ala Thr His Ala Val Val Ala Gln Leu Ala Glu Arg Arg Leu Pro Lys
 35 40 45
 Pro Gln Val Thr Ser Ser Thr Leu Ala Tyr Arg Ser Lys Val Tyr Leu
 50 55 60
 Leu Asn
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 Leu Lys Ser Ser Thr Asn Arg Phe Ser Tyr Ile Ile Ile Phe Ser Ile
 1 5 10 15
 Gly Asn Thr Lys Ile Pro Ser Ala Pro Ser Ala Phe Ser Leu Pro Met
 20 25 30
 Ile Ser Gln Asn Arg Phe Ser Ser Thr Val Cys Thr Glu His Gln
 35 40 45
 Pro Ser Cys Ala Asn Gly Ile Thr Val Gly Leu Phe Ile Pro Gly Ser
 50 55 60
 Thr Ala Ile Ile Ser Ser Ser Leu Ser Leu Gly Ala Phe Ile Ser Thr
 65 70 75 80
 Tyr Phe Leu Ser Ser Ala Val Phe Thr Ala Ser Met Arg Lys Ser Asn
 85 90 95
 Ser Ser Asn Ile Ser Phe Phe Ser Leu Leu Ile Phe Leu Leu Pro Ile
 100 105 110
 Ser Lys Ala Ser Asp Leu Ile Thr Thr Ser Thr Ser Phe Arg Arg Leu
 115 120 125
 Leu Thr Arg Val Glu Pro Glu Leu Thr Ile Ser Lys Ile Ala Ser Ala
 130 135 140
 Asn Pro Met Pro Gly Ala Thr Ser Thr Glu Pro Val Met Thr Cys Thr
 145 150 155 160
 Ser Ala Phe Thr Pro Leu Leu Phe Ile Lys Ala Ser Lys Ile Pro Gly
 165 170 175

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<400> 5919

Leu Ser Ser Pro Ile Ile Leu Val Met Val Asn Val Ile Arg Arg Met
 1 5 10 15
 Lys Ala Asn Thr Ser Ile Ile Glu Lys Glu Ser Ile Arg Phe Leu Ile
 20 25 30
 Asn Leu Ser Gln Leu Phe Leu Gly Thr Ala Phe Ile Pro Gln Ile Glu
 35 40 45
 Phe Asn Glu Leu Cys Ile Ser Ala Lys Ile Val Val Ala Pro Lys Ile
 50 55 60
 Glu Ile Pro Lys Leu Thr Lys Ala Ala Asp Leu Glu Glu Ser Val Phe
 65 70 75 80
 Ser Ala Phe Ser Ile Ile Glu Arg Arg Ala Ser Val Thr Ser Gly Pro
 85 90 95
 Thr Ile Gly Cys Ser Trp Thr
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<213> B.fragilis

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Leu Arg Leu Leu Ser Ile Arg Phe Ser Ser Ala Asp Thr Cys Leu Val
 1 5 10 15
 Ala Leu Leu Ser Ala Ala Tyr Val Val Thr Glu Tyr Lys Val Thr Ala
 20 25 30
 Ile Thr Ile Ser Ala Ile Leu Lys Asp Leu Pro Thr Val Asn Val Val
 35 40 45
 Phe Pro Met Phe Val Leu Cys Leu Phe Met Met His Val Val Gln Ser
 50 55 60

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<213> B.fragilis

<400> 5921

Thr Leu Lys Leu Lys Ile Met Lys Leu Ile Lys Tyr Pro Asp Arg Ser
 1 5 10 15
 Gln Trp Asn Glu Ile Leu Lys Arg Pro Val Leu Glu Thr Glu Asn Leu
 20 25 30
 Phe Asp Thr Val Arg Asn Ile Ile Asn Arg Val Arg Ala Gly Gly Asp
 35 40 45
 Trp Val Val Met Glu Tyr Glu Ala Val Phe Asp Lys Ala Glu Leu Thr
 50 55 60
 Ser Leu Ala Val Thr Ser Ala Glu Ile Glu Glu Ala Glu Lys Glu Val
 65 70 75 80
 Pro Ile Glu Leu Lys Ala Ala Ile Tyr Leu Ala Lys Arg Asn Ile Glu
 85 90 95
 Thr Phe His Ser Ala Gln Arg Phe Glu Gly Lys Lys Val Asp Thr Met
 100 105 110
 Glu Gly Val Thr Cys Trp Gln Lys Ala Val Ala Ile Glu Lys Val Gly
 115 120 125
 Leu Tyr Ile Pro Gly Gly Thr Ala Pro Leu Phe Ser Thr Val Leu Met
 130 135 140
 Leu Ala Ile Pro Ala Lys Ile Ala Gly Cys Lys Glu Ile Val Leu Cys
 145 150 155 160
 Thr Pro Pro Asp Lys Asn Gly Lys Val His Pro Ala Ile Leu Phe Ala

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[illegible]

<400> 5922

[illegible]

<210> 5923
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 <212> PRT
 <213> B.fragilis

<400> 5923

Cys	Ile	Ser	Thr	Ser	Phe	Lys	Phe	Ile	Thr	Asp	Gln	Phe	Phe	Ser	Glu
1				5					10					15	
Glu	Thr	Lys	Asn	Gln	Ser	Asn	Ser	Ser	Thr	Lys	Gln	Arg	Leu	Ser	Lys
			20					25					30		
Met	Ser	Ser	Pro	His	Tyr	Asn	Leu	Thr	Lys	Pro	Gln	Ile	Leu	Phe	Phe
		35					40					45			
Ser	Phe	His	Lys	Lys	Val	Ile	Lys	Pro	Asp	Leu	Gln	Lys	Gln	Ile	Lys
	50					55					60				
Arg	Leu	Pro	Leu												
65															

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<400> 5924

Leu	Cys	Thr	Thr	Cys	Ile	Ile	Asn	Lys	His	Lys	Thr	Asn	Ile	Gly	Lys
1				5					10					15	
Thr	Thr	Phe	Thr	Val	Gly	Arg	Ser	Phe	Asn	Ile	Ala	Leu	Ile	Val	Ile
			20					25					30		
Ala	Val	Thr	Leu	Tyr	Ser	Val	Thr	Thr	Tyr	Ala	Ala	Asp	Asn	Lys	Ala
		35					40					45			
Thr	Arg	His	Val	Ser	Ala	Leu	Leu	Asn	Leu	Ile	Asp	Asn	Ser	Leu	Asn
	50					55					60				
Tyr	Ser	Lys	Glu	Ala	Pro	Asn	Asp	Ser	Ile	Ile	Gln	Trp	Gly	Asn	Glu
65					70				75					80	
Leu	Ala	Pro	Leu	Leu	Lys	Lys	Gln	Lys	Glu	Tyr	Lys	Thr	Leu	Phe	Gln
				85				90					95		
Leu	Lys	Gln	Leu	Ile	Val	Thr	Ala	Tyr	Ala	Ser	Arg	Gly	Asp	Met	Asn
		100					105					110			
Met	Ala	Ile	Asp	His	Ala	Arg	Arg	Met	Tyr	Lys	Glu	Ala	Lys	Glu	Leu
		115					120					125			
Asn	Ser	Pro	Ile	Gly	Ile	Ala	Leu	Ser	Ser	Arg	Ala	Ile	Gly	Asp	Ala
		130				135					140				
Tyr	Leu	Asn	Ala	Asn	Met	Gln	Gln	Pro	Ala	Ile	Glu	Ser	Tyr	Lys	Glu
145				150					155					160	
Ala	Leu	Glu	Leu	Leu	Asp	Lys	Ile	Pro	Gly	Ser	Glu	Ile	Leu	Glu	Gln
				165					170				175		
Glu	Ile	Leu	Pro	Lys	Phe	Ile	Leu	Thr	Leu	Ile	Gln	Ala	Ser	His	Met
			180					185					190		
Asp	Glu	Val	Arg	Ile	Tyr	Leu	Gln	Lys	Phe	Glu	Asn	Leu	Tyr	Ala	Asp
		195					200				205				
Asn	Pro	Asn	Pro	Thr	Phe	His	Phe	Phe	Ile	Cys	Ala	Cys	Asn	Ala	Tyr
	210				215						220				
Tyr	Asn	Ile	Glu	Ser	Gly	Asp	Pro	Glu	Lys	Gly	Lys	Ala	Glu	Leu	Asp
225				230						235				240	
Lys	Ala	Arg	Lys	Ile	His	Glu	Gln	Leu	Asn	Tyr	Leu	Tyr	Leu	Arg	Ser
				245					250				255		
Ile	Tyr	Asn	Tyr	Ile	Leu	Ala	Gln	Tyr	Tyr	Gln	Ala	Val	Gly	Lys	Tyr
		260						265				270			
Glu	Leu	Ala	Leu	Gln	Gln	Tyr	Glu	Cys	Leu	Thr	Lys	Val	Pro	Lys	Ala
		275					280								

Pro Ala Pro Asn Lys His Ile Gly Leu Gln Leu Glu Cys Ala Gln Leu
 290 295 300
 Leu Thr Gln Met Gly Arg Thr Glu Glu Ala Tyr Arg Ile Tyr Gln Lys
 305 310 315 320
 Ala Asn Arg Gln Lys Asp Ser Leu Asn Ala Leu Ser Tyr Ala Arg Gln
 325 330 335
 Ile Asn Asp Leu Arg Gly Met Tyr Gln Ile Asp Arg Met Glu Ile Arg
 340 345 350
 Asn Gln Ile Gln Arg Asn Gln Ile Ile Leu Trp Ile Ile Val Ser
 355 360 365
 Ile Phe Ile Leu Met Leu Val Leu Leu Ile Val Arg Ile Arg Gln
 370 375 380
 Glu Ser Asn Arg Leu Leu Arg Ser Lys Glu Glu Leu Glu Ile Ala Arg
 385 390 395 400
 Lys Tyr Ala Glu Asn Ser Ile Arg Thr Lys Ser Leu Phe Leu Ser Asn
 405 410 415
 Met Ser His Glu Ile Arg Thr Pro Leu Asn Ala Leu Ser Gly Phe Ser
 420 425 430
 Ser Ile Leu Thr Asp Glu Ser Ile Asp Asn Asp Thr Arg Tyr Gln Cys
 435 440 445
 Asn Asp Ile Ile Gln Gln Asn Ser Glu Leu Leu Leu Lys Leu Ile Asn
 450 455 460
 Asp Val Ile Asp Leu Ser Asn Leu Asp Pro Gly Lys Leu Thr Phe Asn
 465 470 475 480
 Phe Lys Glu Cys Asp Ala Val Asn Ile Cys Arg Asn Val Ile Asn Thr
 485 490 495
 Val Gln Lys Val Lys Gln Thr Gln Ala Gly Val Ser Phe Val Thr Ser
 500 505 510
 Leu Asp Arg Leu Thr Leu Arg Thr Asp Glu Ala Arg Leu Gln Gln Val
 515 520 525
 Leu Ile Asn Leu Leu Ile Asn Ala Thr Lys Phe Thr Thr Glu Gly Ser
 530 535 540
 Ile Thr Leu Thr Leu Glu Lys Glu Ser Glu Thr Ile Ala Leu Phe Thr
 545 550 555 560
 Val Thr Asp Thr Gly Cys Gly Ile Leu Arg Glu Lys Gln Asp Gln Ile
 565 570 575
 Phe Asn Arg Phe Glu Lys Leu Asn Glu Gly Ala Gln Gly Thr Gly Leu
 580 585 590
 Gly Leu Ser Ile Cys Arg Leu Ile Glu Gln Ile Gly Gly Arg Ile
 595 600 605
 Trp Ile Asp Pro Asp Tyr Thr Glu Gly Ala Arg Phe Arg Phe Thr His
 610 615 620
 Pro Val Arg Pro Ala Lys Gly Lys Glu Ala Glu Arg
 625 630 635

<210> 5925

<211> 389

<212> PRT

<213> B.fragilis

<400> 5925

Glu Cys Gln Thr Asp Trp Ser Thr Glu Lys Ile Ser Ile Gly Lys Met
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 Lys Lys Lys Val Leu Phe Ile Asp Arg Asp Gly Thr Leu Val Ile Glu
 20 25 30
 Pro Pro Val Asp Tyr Gln Leu Asp Ser Leu Glu Lys Leu Glu Phe Tyr
 35 40 45
 Pro Lys Val Phe Arg Asn Leu Gly Phe Ile Arg Ser Lys Leu Asp Phe
 50 55 60

Glu Phe Val Met Val Thr Asn Gln Asp Gly Leu Gly Thr Ser Ser Phe
 65 70 75 80
 Pro Glu Glu Thr Phe Trp Pro Ala His Asn Leu Met Leu Lys Thr Leu
 85 90 95
 Ala Gly Glu Gly Ile Thr Phe Asp Asp Ile Leu Ile Asp Arg Ser Met
 100 105 110
 Pro Glu Asp Cys Ala Ser Thr Arg Lys Pro Arg Thr Gly Met Leu Thr
 115 120 125
 Lys Tyr Ile Ser Asn Pro Glu Tyr Asp Leu Glu Gly Ser Phe Val Ile
 130 135 140
 Gly Asp Arg Pro Thr Asp Val Glu Leu Ala Lys Asn Ile Gly Cys Arg
 145 150 155 160
 Ala Ile Tyr Leu Gln Glu Ser Ile Asp Leu Leu Lys Glu Lys Gly Leu
 165 170 175
 Glu Thr Tyr Cys Ala Leu Ala Thr Thr Asp Trp Asp Arg Val Ala Glu
 180 185 190
 Phe Leu Phe Ala Gly Glu Arg Lys Ala Glu Ile Arg Arg Thr Thr Lys
 195 200 205
 Glu Thr Asp Ile Leu Val Ala Leu Asn Leu Asp Gly Lys Gly Thr Cys
 210 215 220
 Asp Ile Ser Thr Gly Leu Gly Phe Phe Asp His Met Leu Glu Gln Ile
 225 230 235 240
 Gly Lys His Ser Gly Met Asp Leu Thr Ile Arg Val Lys Gly Asp Leu
 245 250 255
 Glu Val Asp Glu His His Thr Ile Glu Asp Thr Ala Ile Ala Leu Gly
 260 265 270
 Glu Cys Ile Tyr Gln Ala Leu Gly Ser Lys Arg Gly Ile Glu Arg Tyr
 275 280 285
 Gly Tyr Ala Leu Pro Met Asp Asp Cys Leu Cys Arg Val Cys Leu Asp
 290 295 300
 Phe Gly Gly Arg Pro Trp Leu Val Trp Asp Ala Glu Phe Lys Arg Glu
 305 310 315 320
 Lys Ile Gly Glu Met Pro Thr Glu Met Phe Leu His Phe Phe Lys Ser
 325 330 335
 Leu Ser Asp Ala Ala Lys Met Asn Leu Asn Ile Lys Ala Glu Gly Gln
 340 345 350
 Asn Glu His His Lys Ile Glu Gly Ile Phe Lys Ala Leu Ala Arg Ala
 355 360 365
 Leu Lys Met Ala Leu Lys Lys Asp Ile Tyr His Phe Glu Met Pro Ser
 370 375 380
 Ser Lys Gly Val Leu
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<210> 5926

<211> 938

<212> PRT

<213> B.fragilis

<400> 5926

Lys Lys Lys Thr Thr Val Val Ile Trp Thr Gly Cys Leu Asn Asp Asp
 1 5 10 15
 Arg Phe Val Pro Leu Ala Met Lys Lys Thr Ile Gln Gln Leu Val Leu
 20 25 30
 Glu Arg Ile Leu Ile Leu Asp Gly Ala Met Gly Thr Met Ile Gln Gln
 35 40 45
 Tyr Asn Leu Arg Glu Glu Asp Phe Arg Asn Glu Arg Phe Ala His Ile
 50 55 60
 Pro Gly Gln Leu Lys Gly Asn Asn Asp Leu Leu Cys Leu Thr Arg Pro
 65 70 75 80

Asp	Val	Ile	Arg	Asp	Ile	His	Arg	Lys	Tyr	Leu	Glu	Ala	Gly	Ala	Asp	85	90	95
Ile	Ile	Glu	Thr	Asn	Thr	Phe	Ser	Ser	Thr	Thr	Ile	Ser	Met	Ala	Asp	100	105	110
Tyr	His	Val	Gln	Glu	Tyr	Val	Arg	Glu	Met	Asn	Gln	Ala	Ala	Val	Lys	115	120	125
Leu	Ala	Arg	Glu	Val	Ala	Asp	Glu	Tyr	Thr	Ala	Leu	Asn	Pro	Asp	Lys	130	135	140
Pro	Arg	Phe	Val	Ala	Gly	Ser	Val	Gly	Pro	Thr	Asn	Lys	Thr	Cys	Ser	145	150	155
Met	Ser	Pro	Asp	Val	Asn	Asn	Pro	Ala	Tyr	Arg	Ala	Val	Thr	Tyr	Asp	165	170	175
Glu	Met	Ala	Asp	Ala	Tyr	Gln	Gln	Gln	Met	Glu	Ala	Met	Leu	Glu	Ser	180	185	190
Gly	Val	Asp	Ala	Leu	Leu	Ile	Glu	Thr	Ile	Phe	Asp	Thr	Leu	Asn	Ala	195	200	205
Lys	Ala	Ala	Ile	Leu	Ala	Ala	Glu	Arg	Ala	Met	Lys	Ala	Thr	Gly	Val	210	215	220
Lys	Val	Pro	Val	Met	Leu	Ser	Val	Thr	Val	Ser	Asp	Thr	Gly	Gly	Arg	225	230	235
Thr	Leu	Ser	Gly	Gln	Thr	Leu	Glu	Ala	Phe	Leu	Ala	Ser	Val	Gln	His	245	250	255
Ala	Asp	Ile	Phe	Ser	Val	Gly	Leu	Asn	Cys	Ser	Phe	Gly	Ala	Arg	Gln	260	265	270
Leu	Lys	Pro	Phe	Leu	Glu	Gln	Leu	Ala	Ala	Arg	Ala	Pro	Tyr	Tyr	Ile	275	280	285
Ser	Ala	Tyr	Pro	Asn	Ala	Gly	Leu	Pro	Asn	Ser	Leu	Gly	Lys	Tyr	Asp	290	295	300
Gln	Thr	Pro	Ala	Asp	Met	Ala	His	Glu	Val	Lys	Glu	Tyr	Val	His	Glu	305	310	315
Gly	Leu	Ile	Asn	Ile	Ile	Gly	Gly	Cys	Cys	Gly	Thr	Thr	Asp	Ala	Tyr	325	330	335
Ile	Ala	Glu	Tyr	Pro	Ala	Leu	Ile	Ala	Gly	Ala	Lys	Pro	His	Ile	Pro	340	345	350
Val	Cys	Lys	Pro	Asp	Cys	Met	Trp	Leu	Ser	Gly	Leu	Glu	Leu	Leu	Glu	355	360	365
Val	Lys	Pro	Glu	Ile	Asn	Phe	Val	Asn	Val	Gly	Glu	Arg	Cys	Asn	Val	370	375	380
Ala	Gly	Ser	Arg	Lys	Phe	Leu	Arg	Leu	Ile	Asn	Glu	Lys	Lys	Tyr	Asp	385	390	395
Glu	Ala	Leu	Ser	Ile	Ala	Arg	Lys	Gln	Val	Glu	Asp	Gly	Ala	Leu	Ile	405	410	415
Ile	Asp	Val	Asn	Met	Asp	Asp	Gly	Leu	Leu	Asp	Ala	Lys	Glu	Glu	Met	420	425	430
Thr	Thr	Phe	Leu	Asn	Leu	Val	Ala	Ser	Glu	Pro	Glu	Ile	Ala	Arg	Val	435	440	445
Pro	Val	Met	Ile	Asp	Ser	Ser	Lys	Trp	Glu	Val	Ile	Glu	Ala	Gly	Leu	450	455	460
Lys	Cys	Leu	Gln	Gly	Lys	Ser	Ile	Val	Asn	Ser	Ile	Ser	Leu	Lys	Glu	465	470	475
Gly	Glu	Glu	Lys	Phe	Leu	Glu	His	Ala	Arg	Thr	Val	Arg	Gln	Tyr	Gly	485	490	495
Ala	Ala	Val	Val	Met	Ala	Phe	Asp	Glu	Lys	Gly	Gln	Ala	Asp	Thr		500	505	510
Ala	Thr	Arg	Lys	Ile	Glu	Val	Cys	Glu	Arg	Ala	Tyr	His	Leu	Leu	Val	515	520	525
Asp	Lys	Ile	Gly	Phe	Asn	Pro	His	Asp	Ile	Ile	Phe	Asp	Pro	Asn	Val	530	535	540
Leu	Ala	Val	Ala	Thr	Gly	Ile	Glu	Glu	His	Asn	Asn	Tyr	Ala	Val	Asp			

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545 550 555 560
 Phe Ile Glu Ala Thr Ala Trp Ile Lys Lys Asn Leu Pro Gly Ala His
 565 570 575
 Ile Ser Gly Gly Val Ser Asn Leu Ser Phe Ser Phe Arg Gly Asn Asn
 580 585 590
 Tyr Ile Arg Glu Ala Met His Ala Val Phe Leu Tyr His Ala Ile Gln
 595 600 605
 Lys Gly Met Asp Met Gly Ile Val Asn Pro Gly Thr Ser Val Leu Tyr
 610 615 620
 Thr Asp Ile Pro Ala Asp Val Leu Glu Arg Ile Glu Asp Val Val Leu
 625 630 635 640
 Asn Arg Arg Ser Asp Ala Ala Glu Arg Leu Ile Glu Leu Ala Asp Arg
 645 650 655
 Leu Lys Glu Ala Ser Ala Gly Asn Thr Ser Ala Gly Gln Pro Val Lys
 660 665 670
 His Asp Ala Trp Arg Asp Gly Thr Val Glu Glu Arg Leu Gln Tyr Ala
 675 680 685
 Leu Val Lys Gly Ile Gly Asp Phe Leu Glu Glu Asp Leu Ala Glu Ala
 690 695 700
 Leu Pro Lys Tyr Asp Lys Ala Val Asp Val Ile Glu Gly Pro Leu Met
 705 710 715 720
 Asn Gly Met Asn His Val Gly Glu Leu Phe Gly Ala Gly Lys Met Phe
 725 730 735
 Leu Pro Gln Val Val Lys Thr Ala Arg Thr Met Lys Lys Ala Val Ala
 740 745 750
 Ile Leu Gln Pro Ile Ile Glu Ser Glu Lys Val Glu Gly Thr Ala Ser
 755 760 765
 Ala Gly Lys Val Leu Leu Ala Thr Val Lys Gly Asp Val His Asp Ile
 770 775 780
 Gly Lys Asn Ile Val Ser Val Val Met Ala Cys Asn Gly Tyr Asp Ile
 785 790 795 800
 Ile Asp Leu Gly Val Met Val Pro Ala Glu Ser Ile Val Gln Lys Ala
 805 810 815
 Ile Glu Glu Lys Val Asp Met Ile Gly Leu Ser Gly Leu Ile Thr Pro
 820 825 830
 Ser Leu Glu Glu Met Val His Val Ala Met Glu Leu Glu Lys Ala Gly
 835 840 845
 Leu Asp Ile Pro Leu Leu Ile Gly Gly Ala Thr Thr Ser Lys Leu His
 850 855 860
 Thr Ala Leu Lys Ile Ala Pro Val Tyr His Ala Pro Val Val His Leu
 865 870 875 880
 Lys Asp Ala Ser Gln Asn Ala Gly Val Ala Ala Arg Leu Met Ser Pro
 885 890 895
 Lys Ser Lys Glu Glu Leu Ala Lys Glu Leu Ser Gly Glu Tyr Glu Ala
 900 905 910
 Leu Arg Asp Lys Ser Gly Met Met Lys Arg Glu Thr Val Ser Leu Lys
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 Glu Ala Gln Glu Asn Arg Leu Lys Leu Phe
 930 935

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<211> 788

<212> PRT

<213> B.fragilis

<400> 5927

Ile Lys Trp Thr Ser Phe Ala Val Ile Ile Val Thr Phe Tyr Ala Thr
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 Lys Val His Phe Tyr Glu Glu Lys Lys Ser Lys Arg Arg Gln Lys Pro

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Lys	Leu	Phe	Ile	Ile	Phe	Ala	Ala	Leu	Lys	His	Ser	Glu	Pro	Leu	Gln
		35					40					45			
Arg	Glu	Thr	Asn	Ser	Asp	Phe	Arg	Phe	Ser	Gln	Thr	Ser	Leu	Ile	His
	50					55					60				
His	Leu	Lys	Ile	Ile	Ala	Phe	Val	Lys	Phe	Pro	Thr	Ser	Ala	Ser	Gln
65					70					75					80
Leu	Gln	Pro	Tyr	Val	Phe	Gln	Arg	Ile	Lys	Leu	Lys	Tyr	Leu	Asn	Asn
			85					90						95	
Ser	Leu	Tyr	Cys	Met	Tyr	Asn	Ile	Ile	Gln	Leu	Asn	Asp	Lys	Asn	Leu
			100					105					110		
Ser	Glu	Leu	Gln	Ala	Ile	Ala	Gln	Glu	Leu	Gly	Ile	Lys	Lys	Thr	Asp
	115						120					125			
Ser	Leu	Lys	Lys	Glu	Glu	Leu	Val	Tyr	Lys	Ile	Leu	Asp	Glu	Gln	Ala
	130					135					140				
Ile	Ala	Gly	Ala	Thr	Lys	Lys	Val	Ala	Ala	Asp	Lys	Leu	Lys	Glu	Glu
145					150					155					160
Arg	Lys	Glu	Asp	Lys	Lys	Lys	Arg	Ser	Arg	Val	Thr	Val	Lys	Lys	Glu
			165						170					175	
Asn	Ala	Asp	Lys	Val	Phe	Ser	Ser	Thr	Lys	Asn	Gly	Glu	Leu	Thr	Lys
		180						185					190		
Thr	Asp	Ala	Lys	Thr	Pro	Ala	Ala	Lys	Thr	Gln	Pro	Gln	Pro	Lys	Thr
	195						200					205			
Thr	Glu	Pro	Thr	Pro	Glu	Thr	Ala	Lys	Glu	Ala	Asn	Ala	Glu	Thr	Asn
	210					215					220				
Ala	Thr	Pro	Ala	Glu	Ser	Val	Lys	Val	Thr	Pro	Tyr	Ala	Thr	Pro	Lys
225					230					235					240
Lys	Lys	Pro	Gly	Arg	Pro	Arg	Lys	Asn	Gln	Val	Glu	Thr	Glu	Ala	Lys
			245						250					255	
Pro	Ala	Glu	Glu	Thr	Thr	Glu	Lys	Pro	Glu	Thr	Val	Pro	Ser	Ala	Gln
		260						265					270		
Glu	Glu	Lys	Pro	Ala	Ala	Gln	Pro	Glu	Thr	Glu	Lys	Arg	Pro	Ile	Ser
		275					280					285			
Lys	Pro	Ile	Leu	Lys	Pro	Lys	Pro	Ala	Val	Val	Asp	Glu	Glu	Ser	Ser
	290					295					300				
Ile	Leu	Ser	Asp	Ile	Asp	Ala	Asp	Asp	Asp	Phe	Ile	Pro	Ile	Glu	Asp
305					310					315					320
Leu	Pro	Ser	Glu	Lys	Val	Glu	Leu	Pro	Thr	Glu	Leu	Phe	Gly	Lys	Phe
			325						330					335	
Glu	Ser	Thr	Lys	Ala	Glu	Ala	Ala	Thr	Ala	Pro	Glu	Pro	Val	Ala	Gln
		340						345					350		
Pro	Gln	Arg	Pro	Arg	Val	Ile	Arg	Pro	Arg	Asp	Asn	Asn	Asn	Asn	Asn
		355					360					365			
Asn	Tyr	Asn	Asn	Asn	Asn	Asn	Asn	Gln	Arg	Asn	Asn	Asn	Gln	Arg	Gln
	370					375						380			
Pro	Val	Gln	Gln	Arg	Pro	Met	Pro	Gln	Gln	Asn	Ala	Ala	Glu	Ala	Ala
385					390					395					400
Pro	Val	Gln	Glu	Arg	Arg	Val	Ile	Glu	Arg	Glu	Lys	Pro	Tyr	Glu	Phe
			405						410					415	
Asp	Asp	Ile	Leu	Thr	Gly	Thr	Gly	Val	Leu	Glu	Ile	Met	Gln	Asp	Gly
		420					425						430		
Tyr	Gly	Phe	Leu	Arg	Ser	Ser	Asp	Tyr	Asn	Tyr	Leu	Ser	Ser	Pro	Asp
	435						440					445			
Asp	Ile	Tyr	Val	Ser	Gln	Ser	Gln	Ile	Lys	Leu	Phe	Gly	Leu	Lys	Thr
	450					455					460				
Gly	Asp	Val	Val	Glu	Gly	Val	Ile	Arg	Pro	Pro	Lys	Glu	Gly	Glu	Lys
465					470					475					480
Tyr	Phe	Pro	Leu	Val	Lys	Val	Ser	Lys	Ile	Asn	Gly	Arg	Asp	Ala	Ala
			485					490						495	

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Phe Val Arg Asp Arg Val Pro Phe Asp His Leu Thr Pro Leu Phe Pro
 500 505 510
 Asp Glu Lys Phe Lys Leu Cys Lys Gly Gly Tyr Ser Asp Ser Met Ser
 515 520 525
 Ala Arg Val Val Asp Leu Phe Ser Pro Ile Gly Lys Gly Gln Arg Ala
 530 535 540
 Leu Ile Val Ala Gln Pro Lys Thr Gly Lys Thr Ile Leu Met Lys Glu
 545 550 555 560
 Ile Ala Asn Ala Ile Ala Ala Asn His Pro Glu Val Tyr Met Ile Met
 565 570 575
 Leu Leu Ile Asp Glu Arg Pro Glu Glu Val Thr Asp Met Ala Arg Ser
 580 585 590
 Val Asn Ala Glu Val Ile Ala Ser Thr Phe Asp Glu Pro Ala Glu Arg
 595 600 605
 His Val Lys Ile Ala Gly Ile Val Leu Glu Lys Ala Lys Arg Leu Val
 610 615 620
 Glu Cys Gly His Asp Val Val Ile Phe Leu Asp Ser Ile Thr Arg Leu
 625 630 635 640
 Ala Arg Ala Tyr Asn Thr Val Ser Pro Ala Ser Gly Lys Val Leu Ser
 645 650 655
 Gly Gly Val Asp Ala Asn Ala Leu His Lys Pro Lys Arg Phe Phe Gly
 660 665 670
 Ala Ala Arg Asn Ile Glu Asn Gly Gly Ser Leu Thr Ile Ile Ala Thr
 675 680 685
 Ala Leu Ile Asp Thr Gly Ser Lys Met Asp Glu Val Ile Phe Glu Glu
 690 695 700
 Phe Lys Gly Thr Gly Asn Met Glu Leu Gln Leu Asp Arg Asn Leu Ser
 705 710 715 720
 Asn Lys Arg Ile Phe Pro Ala Val Asn Ile Val Ala Ser Ser Thr Arg
 725 730 735
 Arg Asp Asp Leu Leu Leu Asp Lys Gln Thr Leu Asp Arg Met Trp Ile
 740 745 750
 Leu Arg Lys Tyr Leu Ser Asp Met Asn Pro Ile Glu Ala Met Asp Phe
 755 760 765
 Val Lys Asp Arg Leu Glu Lys Thr Lys Asp Asn Asp Glu Phe Leu Met
 770 775 780
 Ser Met Asn Ser
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 <213> B.fragilis

<400> 5928
 Ser Asn Phe Ala Thr Pro Thr Gln Asp Leu Ala Asn Met Asn Lys Arg
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 Ile Phe Leu Val Ile Gly Val Ile Ile Leu Phe Ile Met Ile Ala Ile
 20 25 30
 Gly Ala Ser Thr Tyr Thr Ile Ile His Ser Leu Ile Gln Lys Glu Lys
 35 40 45
 Glu Ala Phe Lys Pro Gln Val Glu Asn Ile Leu Lys Glu Ala Val Ala
 50 55 60
 Asn Asn Thr Ile Gln Lys Cys Lys Asp Ile Pro Leu Asn Gly Phe Asn
 65 70 75 80
 Asn Ser Pro Asn Lys Ile Gly Thr Tyr Glu Thr Arg Thr Phe Cys Ser
 85 90 95
 Arg Asp Thr Leu Phe Thr Tyr Gln His Lys Ile Gln Asp Val Asp Ser
 100 105 110

Glu Ile Leu Phe Ala Arg Gln Leu Gly Leu Leu Met Met Asp Ser Leu
 115 120 125
 Gln Ser Ser Asp Ile Gln Ala Leu Ile Ile Lys Asp Leu Asn Lys Asn
 130 135 140
 Asp Ile Lys Gly Tyr Ile Asn Thr Gly Ile Ile Val Ser Lys His Leu
 145 150 155 160
 Gln Arg Glu Ile Trp Ser Gln Pro Ser Asn Ser Ile Pro Arg Asn Ala
 165 170 175
 Glu Met Ile Thr Tyr Arg Leu Glu Asn Glu Ile Val Ser Val Asp Tyr
 180 185 190
 Ile Met Tyr Ile Asp Tyr Ser Phe Ser Thr Leu Trp Lys Arg Met Pro
 195 200 205
 Lys Thr Asn Ile Tyr Ile Asn Leu Val Val Glu Val Ile Leu Ile Tyr
 210 215 220
 Thr Ile Thr Leu Phe Val Leu Tyr Tyr Arg Lys Gln Gln Lys Asn Arg
 225 230 235 240
 Ser Val Ser Thr Val Asp Ile Thr Ser Asp Pro Asn Ile Ile Thr Asp
 245 250 255
 Pro Ile Ser Val Asp Asn Thr Val Glu Thr Glu Lys Arg Thr Asn Ser
 260 265 270
 Thr Ile Lys Glu Glu Leu Ser Phe Lys Asp Gln Phe Val Phe Glu Lys
 275 280 285
 Asp Phe Val Leu Phe Asn Asp Arg Pro Ile Lys Met Pro Asn Gln Gln
 290 295 300
 Gln Lys Ile Leu Leu Phe Phe Leu Asn Arg Pro Asn Tyr Arg Val Asn
 305 310 315 320
 Lys His Glu Leu Lys Glu Glu Phe Trp Pro Lys Asn Ser Asp Pro Thr
 325 330 335
 Asn Asn Met Thr Ser Ala Ile Asn Lys Leu Lys Lys Ile Leu Glu Glu
 340 345 350
 Ile Asn Ser Lys Tyr Thr Ile Ile Thr Asp Lys Thr Asn Glu Glu Tyr
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 Tyr Val Leu Ile Arg Asp Lys Ser Ala Glu Lys Ile
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<210> 5929

<211> 133

<212> PRT

<213> B.fragilis

<400> 5929

Met Glu Ile Leu Phe Pro Glu Leu Leu Tyr Ser Ile Ile Val Leu Asn
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 20 25 30
 Asp Asn Phe Glu Asn Asp Lys Glu Leu Ile Leu Arg Asp His Leu Ala
 35 40 45
 Leu Glu Arg Thr Lys Leu Ala Asn Glu Arg Thr Leu Phe Ala Tyr Ile
 50 55 60
 Arg Met Ala Leu Tyr Leu Leu Thr Val Gly Ile Gly Ile Phe Gln Ile
 65 70 75 80
 Glu Ser Ile Ser Arg Leu Asp Gly Leu Ala Trp Gly Cys Ile Ile Ala
 85 90 95
 Gly Ile Phe Leu Phe Phe Leu Gly Phe Val Arg Phe Glu Gln Met Arg
 100 105 110
 Lys His Leu Lys Gln Tyr Thr Lys Thr Cys Arg Asp Thr Glu Asn Glu
 115 120 125
 Ser Ser Arg Lys Lys
 130

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

Lys 1	Met	Asn	Tyr	Gly 5	Phe	Val	Lys	Val	Ala 10	Ala	Ala	Val	Pro	Arg 15	Val
Lys	Val	Ala	Asp 20	Cys	Lys	Phe	Asn 25	Ser	Glu	Arg	Leu	Glu	Gly 30	Leu	Ile
Thr	Ile	Ala 35	Glu	Gly	Lys	Gly 40	Val	Gln	Ile	Leu	Thr 45	Phe	Pro	Glu	Met
Cys	Ile 50	Thr	Gly	Tyr	Thr 55	Cys	Gly	Asp	Leu	Phe 60	Ala	Gln	Gln	Leu	Leu
Leu 65	Glu	Gln	Ala	Glu	Met 70	Ala	Leu	Ile	Gln 75	Ile	Leu	Asn	Ser	Thr	Arg 80
Gln	Leu	Asp	Ile 85	Ile	Ser	Ile	Leu	Gly 90	Met	Pro	Val	Val	Val	Asn 95	Ser
Thr	Val	Ile 100	Asn	Ala	Ala	Val	Val 105	Ile	Gln	Lys	Gly	Lys 110	Ile	Leu	Gly
Val	Val	Pro 115	Lys	Thr	Tyr	Leu	Pro 120	Asn	Tyr	Lys	Glu	Phe 125	Tyr	Glu	Gln
Arg	Trp 130	Phe	Thr	Ser	Ala	Leu 135	Gln	Val	Ser	Glu	Asn 140	Ser	Val	Arg	Leu
Cys 145	Gly	Gln	Ile	Val	Pro 150	Met	Gly	Asn	Asn 155	Leu	Leu	Phe	Glu	Thr	Ala 160
Glu	Thr	Thr	Phe 165	Gly	Ile	Glu	Ile	Cys	Glu 170	Asp	Leu	Trp	Ala 175	Thr	Val
Pro	Pro	Ser 180	Ser	Ser	Leu	Ala	Leu 185	Gln	Gly	Ala	Glu	Ile 190	Ile	Phe	Asn
Leu	Ser 195	Ala	Asp	Asp	Glu	Gly 200	Ile	Gly	Lys	His	Asn 205	Tyr	Leu	Cys	Ser
Leu	Ile 210	Ser	Gln	Gln	Ser 215	Ala	Arg	Cys	Ile	Ser	Gly 220	Tyr	Val	Phe	Ser
Ser 225	Ser	Gly	Phe	Gly 230	Glu	Ser	Thr	Thr	Asp 235	Val	Val	Phe	Ala	Gly	Asn 240
Gly	Leu	Ile	Tyr 245	Glu	Asn	Gly	Tyr	Leu	Leu 250	Ala	Arg	Ser	Glu	Arg 255	Phe
Cys	Met	Glu 260	Glu	Gln	Leu	Ile	Ile 265	Asn	Glu	Ile	Asp	Val 270	Glu	Cys	Ile
Arg	Ala 275	Glu	Arg	Arg	Val	Asn 280	Thr	Thr	Phe	Ala	Ala 285	Asn	Lys	Ala	Asn
Cys	Pro 290	Gly	Lys	Glu	Ala 295	Val	Arg	Ile	Ser	Thr	Glu 300	Phe	Val	Asn	Ser
Lys 305	Asp	Leu	Asn	Leu 310	Thr	Arg	Thr	Phe	Asn 315	Pro	His	Pro	Phe	Val	Pro 320
Gln	Gly	Asn	Glu 325	Leu	Asn	Ser	Arg	Cys	Glu 330	Glu	Ile	Phe	Ser	Ile	Gln
Ile	Ala 340	Gly	Leu	Ala	Gln	Arg	Leu 345	Leu	His	Thr	Gly	Ala 350	Lys	Thr	Ala
Val	Ile 355	Gly	Ile	Ser	Gly	Gly 360	Leu	Asp	Ser	Thr	Leu	Ala 365	Leu	Leu	Val
Cys	Val 370	Lys	Thr	Phe	Asp 375	Lys	Leu	Gly	Leu	Ser	Arg 380	Lys	Asp	Ile	Leu
Gly 385	Ile	Thr	Met	Pro 390	Gly	Phe	Gly	Thr	Thr	Asp 395	Arg	Thr	Tyr	His	Asn 400
Ala	Ile	Asp	Leu 405	Met	Asn	Ser	Leu	Gly	Val 410	Ser	Ile	Arg	Glu	Ile	Ser 415

Ile Arg Glu Ala Cys Ile Gln His Phe Lys Asp Ile Gly His Asp Leu
 420 425 430
 Asn Ile His Asp Val Thr Tyr Glu Asn Ser Gln Ala Arg Glu Arg Thr
 435 440 445
 Gln Ile Leu Met Asp Ile Ala Asn Gln Thr Trp Gly Met Val Ile Gly
 450 455 460
 Thr Gly Asp Leu Ser Glu Leu Ala Leu Gly Trp Ala Thr Tyr Asn Gly
 465 470 475 480
 Asp His Met Ser Met Tyr Gly Val Asn Ala Gly Ile Pro Lys Thr Leu
 485 490 495
 Val Lys His Leu Val Gln Trp Val Ala Glu Asn Gly Met Asp Glu Thr
 500 505 510
 Ser Lys Ala Thr Leu Leu Asp Ile Val Asp Thr Pro Ile Ser Pro Glu
 515 520 525
 Leu Ile Pro Ala Asp Glu Asn Gly Glu Ile Lys Gln Lys Thr Glu Asp
 530 535 540
 Leu Val Gly Pro Tyr Glu Leu His Asp Phe Phe Leu Tyr Tyr Phe Leu
 545 550 555 560
 Arg Phe Gly Phe Arg Pro Ser Lys Ile Tyr Phe Leu Ala Gln Thr Ala
 565 570 575
 Phe Ser Gly Val Tyr Asp Asp Glu Thr Ile Lys Lys Trp Leu Gln Thr
 580 585 590
 Phe Phe Arg Arg Phe Phe Asn Gln Phe Lys Arg Ser Cys Leu Pro
 595 600 605
 Asp Gly Pro Lys Val Gly Ser Ile Ser Ile Ser Pro Arg Gly Asp Trp
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 Arg Met Pro Ser Asp Ala Ser Ser Ala Ala Trp Leu Lys Glu Ile Ala
 625 630 635 640
 Glu Leu

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<211> 289

<212> PRT

<213> B.fragilis

<400> 5931

Pro Tyr Ile His Pro Pro Val Ile Arg Lys Arg Asp Leu Cys Val Thr
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 20 25 30
 Leu Ser Asp Ile His Leu Gly Thr Gln His Ser Lys Thr Glu Glu Val
 35 40 45
 Thr His Phe Leu Lys Ser Ile Asn Cys Asp Arg Leu Ile Leu Asn Gly
 50 55 60
 Asp Ile Ile Asp Gly Trp His Leu Gln Lys Ser Gly Leu Gly Lys Trp
 65 70 75 80
 Lys Ala Lys His Thr Asp Phe Phe Lys Val Ile Met Lys Met Met Glu
 85 90 95
 Asn Phe Gly Thr Gln Val Ile Tyr Val Arg Gly Asn His Asp Asp Phe
 100 105 110
 Leu Asp Asn Leu Ala Pro Leu Asn Phe Tyr Asn Ile Arg Ile Val Lys
 115 120 125
 Asp Cys Ile Tyr Glu Ser His Gly Arg Arg Tyr Tyr Val Thr His Gly
 130 135 140
 Asp Ile Phe Asp Thr Val Thr Thr Gln Met Lys Trp Leu Ala Lys Leu
 145 150 155 160
 Gly Asp Thr Gly Tyr Thr Phe Leu Leu Trp Leu Asn Lys Val Tyr Asn
 165 170 175

Leu Arg Arg Met Lys Gln Gly Lys Pro Tyr Tyr Ser Leu Ser Gln Ser
 180 185 190
 Ile Lys Asn Arg Val Lys Thr Ala Val Ser Tyr Ile Ser Asp Phe Glu
 195 200 205
 Lys Glu Leu Val Gly Leu Ala Arg Ala Lys Lys Cys Asp Gly Val Ile
 210 215 220
 Cys Gly His Ile His His Pro Ala Asn Thr Phe Tyr Glu Asp Ile His
 225 230 235 240
 Tyr Leu Asn Ser Gly Asp Trp Val Glu Thr Leu Ser Ala Leu Thr Glu
 245 250 255
 Asp Glu Asp Gly Asn Trp Thr Ile Arg Tyr Phe Asp Ser Gly Leu Leu
 260 265 270
 Lys Glu Asp Asn His Lys Glu Lys Gln Thr Ile Ser Ile Thr Ile Ala
 275 280 285
 Ser

<210> 5932
 <211> 192
 <212> PRT
 <213> B.fragilis

<400> 5932
 His Cys Asp Leu Cys Ser Thr Ile Leu Lys Arg Gly Lys Val Met Lys
 1 5 10 15
 Arg His Leu Ile Leu Val Phe Ala Leu Leu Ala Ser Ser Val Ala Leu
 20 25 30
 Asn Ala Val Asn Ser Leu Pro Asp Asp Asp Lys Ser Asp Asn Lys Asn
 35 40 45
 Lys Thr Glu Leu Asn Ser Val Val Lys Lys Thr Trp Glu Phe Tyr Ser
 50 55 60
 Thr Ile Lys Gln Pro Ser Ala Asp Ala Leu Ala Asn Ala Gly Asn Tyr
 65 70 75 80
 Lys Phe Gly Gln Glu Ala Gly Tyr Leu Tyr Asn Gln Phe Met Lys Ile
 85 90 95
 Tyr Val Val Arg Glu Glu Val Val Pro Gly Asp Pro Thr Arg Arg Thr
 100 105 110
 Val Ile Arg Lys Pro Thr Ile Tyr Asn Ala Val Arg Ser Ile Glu Lys
 115 120 125
 Gln Leu Asn Lys Glu Leu Lys Ser Asn Gln Met Thr Arg Glu Gln Val
 130 135 140
 Ala Ala Glu Phe Thr Asn Val Leu Lys Val Ala Ile Ser Ala Tyr Asp
 145 150 155 160
 Ser Glu Ser Glu Ser Phe Glu Asp Ala Leu Gln Ile Asn Arg Lys Asn
 165 170 175
 Ala Thr Asp Leu Leu Ser Val Phe Gln Asn Val Lys Leu Thr Glu Ile
 180 185 190

<210> 5933
 <211> 198
 <212> PRT
 <213> B.fragilis

<400> 5933
 Lys Thr Tyr Gln Lys Ala Phe Leu Asn His Ile Phe Pro Tyr Phe Cys
 1 5 10 15
 Phe Leu Ile Phe Ile Asn Ile Glu Phe Thr Leu Leu Tyr Ile Val Glu
 20 25 30
 Met Ile Glu Val Thr Asp Ala Ser Leu Gln Lys Ala Ala Gly Glu Gly

35	40	45
Met Asp Glu Phe Ile Gln Val Phe Thr Asp Lys Tyr Lys Glu Val Ile		
50	55	60
Gly Gly Glu Leu Thr Ala Glu Thr Met Pro Leu Leu Thr Gly Glu Gln		
65	70	75
His Ser Leu Leu Ala Tyr Gln Ile Phe Arg Asp Glu Val Met Phe Gly		80
	85	90
Gly Phe Cys Gln Leu Ile Gln Asn Gly Tyr Gly Gly Tyr Ile Phe Asp		95
	100	105
Asn Pro Phe Ala Lys Val Met Arg Leu Trp Gly Ala Glu Asp Phe Ser		110
	115	120
Lys Leu Val Tyr Lys Ala Lys Lys Ile Tyr Asp Ala His Arg His Asp		125
	130	135
Leu Glu Lys Glu Arg Thr Glu Asp Glu Phe Met Ala Met Tyr Glu Gln		140
145	150	155
Tyr Glu Ala Phe Asp Asp Leu Glu Glu Glu Tyr Leu Asp Ile Glu Glu		160
	165	170
Glu Val Thr Ala Leu Val Ala Ser Tyr Val Asp Asp His Leu Glu Leu		175
	180	185
Phe Ala Lys Ile Val Lys		190
	195	

<210> 5934
 <211> 676
 <212> PRT
 <213> B.fragilis

<400> 5934

Pro Gly Leu His Arg Arg Cys Ala Ile Pro Val Tyr Thr Pro Arg Pro		
1	5	10
Ala Arg Lys Gly Lys Gly Gly Arg Lys Met Lys Arg Leu Ile Leu Ile		15
	20	25
Ile Ile Val Cys Cys Arg Ala Leu Gly Trp Cys His Ala Asn Thr Gln		30
	35	40
Thr Glu Thr Asp Ser Leu Tyr Arg Val Thr Gln Ser Leu Pro His Asp		45
50	55	60
Ser Thr Arg Leu Glu Met Phe Lys Arg Leu Ala Gln Ile Glu Gln Leu		65
	70	75
Thr Pro Lys Cys Ile Thr Phe Ser Gly Leu Leu Arg Glu Glu Ala Thr		80
	85	90
Leu Gln Lys Asn Asp Arg Tyr Asn Ala Ile Ala Ala Tyr Leu His Thr		95
	100	105
Val Tyr Tyr Tyr Asn Gln Asn Asn Arg Asp Ser Val Lys Lys Trp Leu		110
	115	120
Asp Thr Met Glu Pro Tyr Ala Arg Lys Ser Gln Thr Trp Asp Leu Tyr		125
	130	135
Phe Asp Ala Leu Arg Phe Gln Ile Asp Leu Cys Thr Tyr Glu Glu Gln		140
145	150	155
Tyr Glu Leu Ala Ile Asn Glu Ala Asn Gln Met Tyr Glu Arg Ala Gln		160
	165	170
Lys Val Asn Cys Ala Arg Gly Leu Ile Gly Ala Lys Gln Cys Leu Gly		175
	180	185
Asn Ala Tyr Ile Ser Thr Glu Arg Trp Asp Glu Gly Met Lys Ala Leu		190
	195	200
Glu Ala Ala Tyr Gln Leu Ser Gln Thr Asp Asn Ala Val Val Arg		205
	210	215
Ile Ser Ile Leu Cys Gln Leu Ile Ser Ile Thr Lys Asp Gln Lys Asn		220
225	230	235
Asn Gln Leu Leu Ser Glu Tyr Leu Ala Lys Leu Lys Glu Thr Leu His		240

<210>	5935
<211>	252
<212>	PRT

<213> B.fragilis

<400> 5935

Ser Gly Trp Gln Pro Asp Thr Leu Ser Ser Val Asp Glu Lys Gly Glu
 1 5 10 15
 Val Lys Tyr His Lys Pro Asp Cys Ala Val Lys Gly Ser Met Asp Leu
 20 25 30
 Asn Arg Lys Phe Leu Leu Arg Gln Tyr Leu Lys Asp Tyr Leu Ser Ala
 35 40 45
 Val Val Gly Asp Lys Ile Glu Gly Ala Asn His Ser Asp Phe Ser Asp
 50 55 60
 Ala Cys Leu Leu His Gln Ile Val Asp Thr Pro Lys Val Ser Tyr Gln
 65 70 75 80
 Val Ala Tyr Pro Gln Ser Arg Lys Arg Tyr Arg Tyr Ile Arg Tyr Thr
 85 90 95
 Ser Thr Pro Glu Lys Thr Leu Gln Leu Ala Glu Leu Gln Leu Phe Arg
 100 105 110
 Lys Val Asp Asp Gln Glu Lys Ile Thr Ala Lys Val Ile Asp Gly Ser
 115 120 125
 Asn Ala Phe Ile Ala Asp Asp Arg Phe Asp Arg Phe Lys Val Asn Asp
 130 135 140
 Gly Asp Gly Leu Thr Phe Phe Leu Thr Lys Glu Lys Gly Ala Phe Val
 145 150 155 160
 Thr Leu Asp Leu Gly Lys Pro Glu Lys Ile Glu Lys Ile Val Tyr Met
 165 170 175
 Pro Arg Asn Asp Asp Asn Phe Ile Arg Leu Gly Asp Gln Tyr Glu Leu
 180 185 190
 Phe Tyr Gln Asp Gly Phe Arg Gly Trp Ile Ser Leu Gly Arg Gln Val
 195 200 205
 Ala Ser Glu Leu Thr Leu His Tyr Asp Asn Ile Pro Gln Asn Ser Val
 210 215 220
 Leu Trp Leu Arg Asn Leu Ser Arg Gly Arg Glu Glu Thr Val Phe Arg
 225 230 235 240
 Asn Glu Asp Gly Arg Gln Val Phe Phe Val Lys Trp
 245 250

<210> 5936

<211> 315

<212> PRT

<213> B.fragilis

<400> 5936

Lys Arg Ile Lys Met Glu Ile His Ser Glu Arg Lys Lys Arg Leu Ser
 1 5 10 15
 Leu Ser Leu Leu Phe Lys Ile Ile Lys Asp Thr Val Trp Gly Phe Ile
 20 25 30
 Asp Asp Ser Val Met Arg Leu Ser Ala Ser Leu Ala Tyr Ala Thr Leu
 35 40 45
 Phe Ser Ile Ile Pro Phe Leu Ser Leu Leu Val Thr Val Gly Val Phe
 50 55 60
 Phe His Met Asp Leu Ala Asn Gln Leu Tyr Val Gln Leu Gln Pro Ile
 65 70 75 80
 Val Gly Pro Glu Val Thr Glu Ala Leu Arg Ser Ile Ile Glu Asn Ala
 85 90 95
 Glu Asn Thr Asp Ser Ser Arg Ser Ala Ala Phe Val Ser Leu Gly Ile
 100 105 110
 Ser Ile Phe Gly Ala Thr Thr Ile Phe Ala Glu Ile Gln Ser Ser Leu
 115 120 125
 Asn Ser Ile Trp Gly Ile Lys Ala Val Pro Lys Lys Ser Trp Leu Lys

130		135		140
Phe Ile Lys Asn Arg Ile	Leu Ser Phe Ser Ile	Ile Ile Leu Val Phe Ala		
145	150	155	160	
Phe Ile Leu Leu Ile Thr	Phe Thr Ile Thr Asn Ile	Ile Ile Gly Glu Leu		
	165	170	175	
Ser Gln Lys Phe Ile Phe	Lys Tyr Pro Glu Ala Ala	Asp Ser Leu Val		
	180	185	190	
Lys Val Val Gly Ile Ile	Ile Asn Met Ser Val Thr	Thr Thr Ile Ile Phe		
	195	200	205	
Thr Leu Ile Phe Lys Ile	Leu Pro Asp Ala Lys Ile	Lys Ser Lys Asp		
	210	215	220	
Val Cys Ile Gly Ala Val	Val Thr Thr Ile Leu Leu	Leu Ile Gly Gln		
225	230	235	240	
Trp Gly Ile Ser Phe Tyr	Ile Gly Ile Ala Asn Val	Gly Thr Val Tyr		
	245	250	255	
Gly Ala Ala Ala Phe Met	Val Val Phe Val Thr Trp	Ile Tyr Tyr Ser		
	260	265	270	
Ser Ile Ile Ile Tyr Thr	Gly Ala Glu Phe Thr Lys	Ala Trp Ala Asn		
	275	280	285	
Glu Met Gly Ser Lys Ile	Phe Pro Asp Glu Tyr Ala	Val Ala Thr Lys		
	290	295	300	
Thr Ile Glu Ile His Glu	Asp Lys Pro Ile Glu			
305	310	315		

<210> 5937
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 5937
Lys Thr Ser Asn Ile His Tyr Leu Ser Leu Leu Lys Tyr Leu Ala Leu
1 5 10 15
Asp Tyr Lys Pro Arg Gln Ser Pro Ala Asp Ile Leu Ala Leu Val Met
20 25 30
Thr Thr Tyr His Pro His Ser Leu Leu Pro Lys Leu Leu Ser Pro Ile
35 40 45
Gly Leu Leu Lys Asp Pro Phe Val Leu Ser Leu Arg Met Ile Leu
50 55 60

<210> 5938
 <211> 726
 <212> PRT
 <213> B.fragilis

<400> 5938
Phe Phe Tyr Lys Leu Met Asn Arg Leu Lys Leu Tyr Leu Leu Ala Leu
1 5 10 15
Thr Ala Leu Ala Val Cys Ser Ala Lys Ala Asp Glu Gly Met Trp Leu
20 25 30
Leu Gln Leu Met Gln Gln Gln His Ser Ile Asp Met Met Lys Lys Gln
35 40 45
Gly Leu Lys Leu Glu Ala Gln Asp Leu Tyr Asn Pro Asn Gly Val Ser
50 55 60
Leu Lys Asp Ala Val Gly Ile Phe Gly Gly Gly Cys Thr Gly Glu Ile
65 70 75 80
Ile Ser Pro Glu Gly Leu Ile Leu Thr Asn His His Cys Gly Tyr Ala
85 90 95
Ser Ile Gln Gln His Ser Ser Val Glu His Asp Tyr Leu Thr Asp Gly
100 105 110

Phe	Trp	Ala	Thr	Ser	Arg	Asp	Lys	Glu	Leu	Pro	Thr	Pro	Gly	Leu	Lys
	115						120					125			
Phe	Thr	Phe	Ile	Glu	Arg	Ile	Glu	Asp	Ile	Thr	Asp	Ile	Val	Asn	Leu
	130						135				140				
Arg	Ile	Ala	Ala	Lys	Glu	Ile	Thr	Glu	Ser	Glu	Ser	Phe	Ser	Ser	Thr
	145					150					155				160
Phe	Leu	Asn	Lys	Leu	Ala	Lys	Glu	Leu	Phe	Glu	Lys	Ser	Asp	Leu	Lys
			165							170				175	
Gly	Lys	Lys	Gly	Ile	Val	Pro	Gln	Ala	Leu	Pro	Phe	Tyr	Ala	Gly	Asn
			180						185				190		
Lys	Phe	Tyr	Met	Phe	Tyr	Lys	Lys	Val	Tyr	Pro	Asp	Val	Arg	Met	Val
		195					200					205			
Ala	Ala	Pro	Pro	Ser	Ser	Ile	Gly	Lys	Phe	Gly	Gly	Glu	Thr	Asp	Asn
	210						215					220			
Trp	Met	Trp	Pro	Arg	His	Thr	Gly	Asp	Phe	Ser	Met	Phe	Arg	Ile	Tyr
	225				230					235					240
Ala	Asp	Ala	Asn	Gly	Glu	Pro	Ala	Glu	Tyr	Ser	Ala	Ser	Asn	Val	Pro
				245					250					255	
Leu	Lys	Thr	Lys	Lys	His	Leu	Asn	Ile	Ser	Ile	Lys	Gly	Leu	Lys	Glu
			260					265					270		
Gly	Asp	Tyr	Ala	Met	Ile	Met	Gly	Phe	Pro	Gly	Ser	Thr	Ser	Arg	Tyr
		275					280						285		
Leu	Thr	Val	Ser	Glu	Val	Lys	Glu	Arg	Met	Glu	Ala	Ser	Asn	Ala	Pro
		290				295					300				
Arg	Ile	Arg	Ile	Arg	Gly	Thr	Arg	Gln	Asp	Val	Leu	Lys	Glu	Ala	Met
	305				310					315					320
Asn	Ala	Ser	Asp	Lys	Val	Arg	Ile	Gln	Tyr	Ala	Asn	Lys	Tyr	Ala	Gly
				325					330					335	
Ser	Ser	Asn	Tyr	Trp	Lys	Asn	Ser	Ile	Gly	Met	Asn	Lys	Ala	Ile	Ile
			340				345						350		
Asp	Asn	Asn	Val	Leu	Gly	Thr	Lys	Ala	Glu	Gln	Glu	Ala	Lys	Phe	Ala
		355					360					365			
Lys	Phe	Ala	Lys	Glu	Lys	Asn	Asn	Thr	Asp	Tyr	Met	Asn	Val	Val	Ala
	370					375					380				
Lys	Ile	Asp	Glu	Ala	Val	Ala	Lys	Thr	Ser	Pro	Ile	Lys	Tyr	Gln	Gln
	385					390				395					400
Thr	Cys	Leu	Thr	Glu	Thr	Phe	Phe	Gly	Gly	Ile	Glu	Phe	Gly	Ser	Pro
				405					410					415	
Phe	Met	Val	Met	Asp	Lys	Leu	Lys	Glu	Ala	Leu	Glu	Gln	Lys	Asn	Asp
			420					425					430		
Ser	Ser	Ile	Glu	Ala	Asn	Ile	Lys	Val	Leu	Lys	Glu	Val	Phe	Asn	Asp
		435					440					445			
Ile	His	Asn	Lys	Asp	Tyr	Asp	His	Glu	Val	Asp	Arg	Lys	Val	Ala	Lys
	450					455					460				
Ala	Leu	Leu	Pro	Leu	Tyr	Ala	Glu	Met	Ile	Pro	Ala	Gly	Gln	Arg	Pro
	465					470				475					480
Ala	Ile	Tyr	Asp	Val	Ile	Glu	Lys	Glu	Tyr	Lys	Gly	Asp	Tyr	Asn	Ala
				485					490					495	
Tyr	Val	Asp	Ala	Met	Tyr	Asp	Thr	Ser	Ile	Leu	Ala	Asn	Gln	Ala	Asn
		500					505						510		
Phe	Asp	Lys	Phe	Ile	Lys	Lys	Pro	Thr	Val	Lys	Ala	Ile	Glu	Lys	Asp
	515						520					525			
Ile	Ala	Thr	Gln	Tyr	Ser	Arg	Ala	Lys	Phe	Asp	Lys	Tyr	Thr	Asn	Leu
	530					535					540				
Ala	Glu	Gln	Met	Gly	Lys	Leu	Pro	Glu	Asp	Trp	Leu	Leu	Leu	His	Lys
	545				550					555					560
Thr	Tyr	Ile	Arg	Gly	Leu	Gly	Glu	Met	Lys	Leu	Pro	Val	Pro	Ser	Tyr
				565					570					575	
Pro	Asp	Ala	Asn	Phe	Thr	Ile	Arg	Leu	Thr	Tyr	Gly	Asn	Val	Lys	Pro

		580						585					590				
Tyr	Ser	Pro	Lys	Asp	Gly	Val	Tyr	Tyr	Lys	Tyr	Tyr	Thr	Thr	Thr	Asp		
		595						600					605				
Gly	Ile	Leu	Glu	Lys	Glu	Asn	Pro	Glu	Asp	Arg	Glu	Phe	Val	Val	Pro		
		610						615				620					
Ala	Lys	Leu	Lys	Glu	Leu	Ile	Glu	Lys	Lys	Asp	Phe	Gly	Arg	Tyr	Ala		
		625						630				635					
Leu	Pro	Asn	Gly	Glu	Met	Pro	Val	Cys	Phe	Leu	Ser	Thr	Asn	Asp	Ile		
					645					650				655			
Thr	Gly	Gly	Asn	Ser	Gly	Ser	Pro	Val	Leu	Asn	Glu	Asn	Gly	Glu	Leu		
			660					665					670				
Ile	Gly	Cys	Ala	Phe	Asp	Gly	Asn	Trp	Glu	Ser	Leu	Ser	Gly	Asp	Ile		
		675						680					685				
Asn	Phe	Asp	Asn	Asn	Leu	Gln	Arg	Cys	Ile	Asn	Leu	Asp	Ile	Arg	Tyr		
		690						695				700					
Val	Leu	Phe	Ile	Leu	Glu	Lys	Leu	Gly	Gly	Cys	Gly	His	Leu	Ile	Asn		
					710					715					720		
Glu	Met	Thr	Ile	Val	Glu												
					725												

<210> 5939

<211> 347

<212> PRT

<213> B.fragilis

<400> 5939

Glu	Leu	Ile	Leu	Ile	Leu	His	Trp	Arg	Asn	Met	Ile	Tyr	Arg	Asn	Trp		
1				5					10					15			
Leu	Gly	Ile	Ile	Gly	Val	Ala	Cys	Ile	Leu	Phe	Val	Ser	Cys	Lys	Pro		
			20					25					30				
Thr	Glu	Val	Asp	Val	Pro	Ile	Thr	Tyr	Tyr	Ser	Ser	Phe	Leu	Leu	Lys		
			35					40					45				
Asp	Thr	Thr	Val	Met	Leu	Ser	Lys	Val	Glu	Met	Asp	Pro	Met	Gln	Val		
			50				55				60						
Asn	Ala	Arg	Cys	Met	Val	Trp	Asp	Gly	Asp	Lys	Arg	Val	Leu	Val	Arg		
				70						75					80		
Thr	Ser	Thr	Thr	Asp	Ser	Ile	Tyr	Ala	Val	Phe	Ala	Tyr	Pro	Glu	Met		
				85					90					95			
Lys	Phe	Leu	Ser	Tyr	Thr	Gly	Ser	Leu	Ser	Glu	Tyr	Lys	Gln	Ile	Leu		
			100					105					110				
Ala	Lys	Cys	Asn	Glu	Gly	Phe	Tyr	Leu	Val	Lys	Asp	Asp	Ser	Leu	Tyr		
			115					120					125				
Leu	Tyr	His	Leu	Thr	Asp	Lys	Asp	Leu	Leu	Gln	Lys	Thr	Thr	Thr	His		
			130				135					140					
Phe	Leu	Tyr	Asn	Ser	Asn	Lys	Ile	Arg	Leu	Ser	Lys	Ile	Lys	Lys	Leu		
				150						155					160		
Asn	Asp	Lys	Met	Tyr	Thr	Ala	His	Ala	Tyr	Thr	Asp	Pro	Ser	Tyr	Asn		
				165					170					175			
Asp	Ile	Arg	Leu	Asn	Glu	Phe	Tyr	Met	Leu	Asp	Ala	Glu	Asn	Asn	Ile		
			180					185					190				
Leu	Tyr	Pro	Lys	Gly	His	Tyr	Pro	Glu	Arg	Thr	Glu	Val	Arg	Phe	Lys		
			195				200					205					
Thr	Ile	Phe	Asp	Phe	Lys	Phe	Ala	Tyr	Ala	His	Glu	Val	Trp	Pro	Lys		
			210				215					220					
Pro	Asp	Gly	Ser	Arg	Ile	Leu	Val	Asn	Tyr	Val	Arg	Thr	Arg	Arg	Phe		
				230						235					240		
Arg	Ile	Tyr	Asp	Leu	Ser	Ala	Arg	Leu	Leu	His	Asp	Val	Cys	Leu	Asp		
				245					250					255			
Tyr	Ala	Ser	Asn	Lys	Tyr	Val	Val	Asp	Ala	Asp	Pro	Lys	Arg	Trp	Thr		

260	265	270
Thr Phe Ile Arg Asp Cys Phe Val Thr Asp Lys Tyr Ile Tyr Leu Leu		
275	280	285
Cys Pro Glu Gly Glu Gln Ser Ser Leu Val Ile Val Asp Trp Asp Gly		
290	295	300
Arg Pro Ile Ala Arg Tyr Arg Leu Asp Glu Lys Ile Phe Phe Phe Phe		
305	310	315
Ile Asp Pro Asp Arg Asn Leu Phe Cys Gly Ile Asn Ser Asn Asn Gly		
325	330	335
Gln Ser Phe Tyr Phe Leu Asp Leu Asp Ile Asn		
340	345	

<210> 5940
 <211> 265
 <212> PRT
 <213> B.fragilis

<400> 5940
Ile Leu Ile Lys Cys Phe Ile Cys Ile Arg Ile Arg Cys Thr Phe Val
1 5 10 15
Val Glu Lys Val Val Tyr Pro Met Asn Lys Val Leu Pro Phe Leu Leu
20 25 30
Leu Leu Phe Val Phe Thr Ser Cys Arg Lys Tyr Lys Ile Glu Gly
35 40 45
Ala Ser Ser Val Thr Ser Leu Asp Gly Lys Met Leu Phe Ile Lys Val
50 55 60
Leu Gln Asn Gly Glu Trp Leu Asn Ile Asp Ser Ala Glu Val Val His
65 70 75 80
Gly Leu Phe Ser Met Lys Gly Lys Val Asp Ser Val Val Met Ala Thr
85 90 95
Leu Tyr Ile Gly Asp Glu Ser Ile Met Pro Leu Val Ile Glu Lys Gly
100 105 110
Asn Ile Gln Val Ser Ile Thr Asn Thr Glu Leu Val Ala Lys Gly Thr
115 120 125
Ala Leu Asn Asn Ala Leu Tyr Ala Phe Ile Asp Lys Lys Asn Ser Leu
130 135 140
Asp Val Gln Ile Glu Glu Leu Gln Arg Lys Glu Ala Arg Met Val Met
145 150 155 160
Asp Gly Ala Asp Leu Ala Asp Ile His Glu Gln Leu Thr His Glu Gly
165 170 175
Asp Ser Leu Met Gln Asp Met Asn Gly Phe Ile Lys Lys Phe Ile Ser
180 185 190
Asp Asn Tyr Glu Thr Val Leu Gly Pro Ser Val Phe Met Met Leu Cys
195 200 205
Ser Thr Leu Pro Tyr Pro Val Met Thr Pro Gln Ile Glu Asp Ile Met
210 215 220
Lys Asp Ala Pro Tyr Ser Phe Lys Asn Asn Lys Leu Val Lys Asp Phe
225 230 235 240
Ile Thr Lys Ala Lys Ser Asn Met Glu Leu Ile Glu Glu His Gln Arg
245 250 255
Met Glu Gln Asn Ala Thr Leu Asn His
260 265

<210> 5941
 <211> 385
 <212> PRT
 <213> B.fragilis

<400> 5941

Gly Lys Thr Asn Tyr Ile His Asn Asn Ser Ile Met Lys Phe Leu Phe
 1 5 10 15
 Ile Val Gln Gly Glu Gly Arg Gly His Phe Thr Gln Ala Ile Thr Leu
 20 25 30
 Glu Asp Met Leu Leu Arg Asn Gly His Gln Val Val Glu Val Leu Val
 35 40 45
 Gly Lys Ser Ser Ser Arg Thr Leu Pro Gly Phe Phe Asn Arg Ser Ile
 50 55 60
 Gln Ala Pro Val Lys Arg Phe Thr Ser Pro Asn Phe Leu Pro Thr Ala
 65 70 75 80
 Glu Asn Lys Arg Ala Asp Leu Lys Lys Ser Phe Ala Tyr Asn Leu Ile
 85 90 95
 His Val Pro Glu Tyr Phe Arg Ser Met Cys Tyr Ile Asn Gln Arg Ile
 100 105 110
 Lys Glu Thr Gly Ala Glu Val Val Ile Asn Phe Tyr Glu Leu Leu Thr
 115 120 125
 Gly Leu Thr Tyr Ala Leu Phe Arg Pro Ser Val Pro Tyr Val Cys Ile
 130 135 140
 Gly His Gln Tyr Leu Phe Leu His Asn His Phe Glu Phe Pro Arg Lys
 145 150 155 160
 Ser Val Ile Gln Leu Ser Met Leu Arg Phe Phe Thr Arg Met Thr Ser
 165 170 175
 Leu Arg Ala Ser Arg Arg Leu Ala Leu Ser Phe Arg Lys Met Glu Ser
 180 185 190
 Asp Arg Thr Glu Arg Ile Ser Val Val Pro Pro Leu Leu Arg Arg Glu
 195 200 205
 Val Thr Ala Met Gln Ser Ala Gln Gly Asn Tyr Ile His Gly Tyr Met
 210 215 220
 Val Asn Ser Gly Phe Ala Asp Ser Val Glu Ala Phe His Ala Leu His
 225 230 235 240
 Pro Glu Ile Pro Met His Phe Phe Trp Asp Lys Gln Asp Ala Asp Glu
 245 250 255
 Val Thr Lys Val Asp Ala Thr Leu Ser Phe His Gln Ile Asp Asp Val
 260 265 270
 Lys Phe Leu Asn Arg Met Ala Gly Cys Arg Ala Tyr Ala Ser Thr Ala
 275 280 285
 Gly Phe Glu Ser Ile Cys Glu Ala Met Tyr Leu Gly Lys Pro Val Leu
 290 295 300
 Met Val Pro Ala His Ile Glu Gln Asp Cys Asn Ala Tyr Asp Ala Arg
 305 310 315 320
 Gln Ala Gly Ala Gly Ile Ile Gly Glu Ser Phe Asp Leu Glu Ser Leu
 325 330 335
 Leu Arg Phe Ala Gly Thr Tyr Val Pro Asn Arg Glu Phe Ile Arg Trp
 340 345 350
 Val Arg Ser Cys Glu Arg Gln Ile Ile Gly Glu Leu Glu Arg Leu Ala
 355 360 365
 Asp Gln His Ser Ala Val Thr Val Pro Thr Leu Thr Asn Tyr Phe Pro
 370 375 380
 Ile
 385

<210> 5942

<211> 93

<212> PRT

<213> B.fragilis

<400> 5942

Ser Gly Lys Asn Arg Lys Glu Thr Asp Gln Lys Lys Arg Asn Phe Phe
 1 5 10 15

Tyr Leu Phe Cys Lys Ile Asp Cys Lys Ser Leu Asn Gly Leu Ile Leu
 20 25 30
 Leu Phe Phe Asp Arg Ile Leu Ala Ser Leu Ile Leu Phe Phe Leu Lys
 35 40 45
 Leu Cys Lys Val Asn Gln Cys Arg Lys Tyr Asp Tyr Asn Glu Val Glu
 50 55 60
 Thr Gly Ser Ser Trp Asp Val Ala Asn Leu Gly Asn Tyr Asp Val
 65 70 75 80
 Gly His His Ile Leu Ser Asn Ser Arg Arg Glu Met Ser
 85 90

<210> 5943

<211> 290

<212> PRT

<213> B.fragilis

<400> 5943

Ile Phe Met Lys Tyr Leu Tyr Val Leu Leu Ala Phe Ser Phe Leu Phe
 1 5 10 15
 Ser Cys Lys Asp Glu Asn Lys Lys His Ala Glu Ser Val Leu Arg Glu
 20 25 30
 Trp Met Asn Lys Glu Ile Val Phe Pro Asn Lys Met Tyr Phe Ser Ile
 35 40 45
 Gln Gly Lys Glu Asn Val Asp Phe Arg Ile Lys Asp Thr Glu Tyr Lys
 50 55 60
 Ile Val Ala Tyr Val Asp Ser Ala Gly Cys Thr Ser Cys Lys Leu His
 65 70 75 80
 Leu Ser Lys Trp Lys Glu Leu Ile His Tyr Val Asp Ser Ile Gln Ser
 85 90 95
 Glu Arg Val Gln Phe Leu Phe Phe Phe Pro Lys Asn Gly Arg Asp
 100 105 110
 Ile Tyr His Thr Met Arg Met Asp Lys Phe Thr Tyr Pro Val Cys Val
 115 120 125
 Asp Thr Leu Asp Ser Phe Asn Lys Leu Asn His Phe Pro Asp Asp Val
 130 135 140
 Arg Phe Gln Thr Phe Leu Leu Asn Lys Glu Asn Lys Val Val Ala Val
 145 150 155 160
 Gly Asn Pro Ile His Asn Pro Asn Ile Arg Asp Leu Phe Leu Asn Ile
 165 170 175
 Ile Ser Gly Gly Thr Ser Leu Pro Asp Glu Lys Arg Pro Gln Thr Glu
 180 185 190
 Val Lys Ile Glu Ala Leu Ser Met Asp Leu Gly Met Phe Asp Trp Lys
 195 200 205
 Lys Glu Gln Lys Cys Ile Phe Thr Val Glu Asn Thr Gly Lys Glu Leu
 210 215 220
 Leu Val Ile Asp Asp Val Asn Thr Ser Cys Gly Cys Thr Thr Val Glu
 225 230 235 240
 Tyr Ser Arg Glu Pro Val Gln Ser Gly Lys Thr Ile Asp Ile Thr Val
 245 250 255
 Val Tyr Lys Ala Glu Tyr Pro Glu His Phe Asn Lys Thr Ile Thr Val
 260 265 270
 Tyr Cys Asn Ser Pro Val Ser Pro Leu Gln Leu Lys Ile Lys Gly Asp
 275 280 285
 Ala Lys
 290

<210> 5944

<211> 136

<212> PRT

<213> B.fragilis

<400> 5944

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Ser Val Met Asn Leu Asn Glu Val Asp Ile His Tyr Leu Ile Ala Ala
1      5      10      15
Ile Ser Val Ile Thr Ser Ala Leu Val Phe Tyr Thr Ile Gly Val Trp
20      25      30
Gly Glu Arg Leu Gln Lys Arg Leu Lys Phe Trp His Leu Val Phe Phe
35      40      45
Leu Leu Gly Leu Leu Ala Asp Ser Val Gly Thr Ala Leu Met Glu Asn
50      55      60
Ile Ala Arg Leu Thr His Leu His Asp Glu Ile His Thr Val Thr Gly
65      70      75      80
Ile Ile Ala Ile Leu Leu Met Phe Ile His Ala Met Trp Ala Ile Trp
85      90      95
Thr Tyr Val Lys Gly Ser Glu Arg Ala Lys Glu His Phe Asn Arg Phe
100     105     110
Ser Ile Val Val Trp Cys Ile Trp Leu Ile Pro Tyr Cys Ile Gly Val
115     120     125
Tyr Leu Gly Met Ser Leu His His
130     135

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<210> 5945

<211> 355

<212> PRT

<213> B.fragilis

<400> 5945

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Asn Leu Met Lys Tyr Cys Leu Thr Phe Leu Phe Leu Leu Val Ile Phe
1      5      10      15
Thr Gly Cys Thr Ser Asp Leu Pro Lys Asp Arg Met Leu Tyr Ala Ser
20      25      30
Phe Pro Lys Glu Glu Thr Leu His Ser Lys Val Ile Gln Leu Asp Ser
35      40      45
Val Tyr Met Arg Tyr Pro Phe Arg Val His Val Ser Gly Asp Gln Ala
50      55      60
Val Val Leu Asp Leu His Gly Thr Asp Val Tyr Cys His Leu Phe His
65      70      75      80
Tyr Pro Asp Phe His Tyr Leu Ser Ser Phe Gly Arg Arg Gly Asp Ser
85      90      95
Pro Glu Glu Met Leu Ser Val Glu Thr Val Lys Cys Ile Asp Gly Ser
100     105     110
Phe Trp Thr Leu Asp Ala Asn Lys Gly Glu Leu Thr Arg Phe Glu Phe
115     120     125
Val Ser Asp Arg Asp Ser Leu Leu Arg Ala Glu Ala Ile Ser Phe Asp
130     135     140
Lys Asp Ser Ile Leu Arg Ala Leu Asp Phe Val Ala Phe Asn Asp Thr
145     150     155     160
Thr Phe Leu Ile Pro Asp Tyr Ser Gly Asp Ser Arg Phe Cys Trp Val
165     170     175
Asn Arg Gln Gly Lys Phe Leu Lys Lys Ser Gly Val Ile Pro Ser Leu
180     185     190
Asn Glu Glu Ala Leu Lys Glu Ala Arg Pro Ala Leu Ala Gln Ala Trp
195     200     205
Arg Ser Phe Ile Asp Tyr Asn Pro His Asn Gly Val Leu Val Ala Ala
210     215     220
Thr Gln Leu Gly Glu Val Leu Glu Ile Tyr Asn Leu Gln Asn Gly Phe
225     230     235     240
His Arg Val Cys Leu Gly Pro Lys Gly Glu Pro Glu Phe Lys Leu Ala

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				245					250					255			
Gly	Gly	Tyr	Ala	Ile	Pro	Asp	Gly	Ile	Met	Gly	Phe	Ser	Asp	Val	Gln		
			260					265					270				
Val	Thr	Asp	Glu	Ala	Ile	Tyr	Ala	Val	Phe	His	Gly	His	Thr	Phe	Lys		
		275					280					285					
Glu	Ile	Met	Ala	Gln	His	Gln	Lys	Glu	Gly	Arg	Ala	Thr	Asp	Gly	Gly		
	290					295					300						
Gln	Tyr	Ile	Tyr	Val	Phe	Asn	Leu	Gln	Gly	Glu	Pro	Leu	Cys	Lys	Tyr		
305					310					315					320		
Thr	Leu	Asp	Arg	Tyr	Ile	Thr	Gly	Phe	His	Val	Asp	Glu	Arg	Asn	Lys		
				325					330					335			
Thr	Ile	Thr	Ala	Thr	Asp	Val	Asn	Asn	Asp	Gln	Pro	Ile	Val	Glu	Phe		
			340					345					350				
Arg	Phe	Gly															
		355															

<210> 5946

<211> 187

<212> PRT

<213> B.fragilis

<400> 5946

Asp	Glu	Met	Lys	Lys	Phe	Arg	Cys	Thr	Val	Cys	Gly	Tyr	Val	Tyr	Glu		
1				5					10					15			
Gly	Asp	Ala	Ala	Pro	Glu	Lys	Cys	Pro	Leu	Cys	Lys	Ala	Pro	Ala	Ser		
			20					25					30				
Lys	Phe	Val	Glu	Val	Val	Glu	Glu	Glu	Gly	Gly	Ala	Leu	Thr	Phe	Val		
		35				40						45					
Asp	Glu	His	Val	Ile	Gly	Val	Ala	Lys	Gly	Cys	Asp	Glu	Glu	Met	Ile		
	50				55					60							
Lys	Asp	Leu	Asn	Asn	His	Phe	Met	Gly	Glu	Cys	Thr	Glu	Val	Gly	Met		
65				70						75				80			
Tyr	Leu	Ala	Met	Ser	Arg	Gln	Ala	Asp	Arg	Glu	Gly	Tyr	Pro	Glu	Val		
			85					90						95			
Ala	Glu	Ala	Phe	Lys	Arg	Tyr	Ala	Trp	Glu	Glu	Ala	Glu	His	Ala	Ser		
		100						105						110			
Lys	Phe	Ala	Glu	Leu	Leu	Gly	Asp	Cys	Val	Trp	Asp	Thr	Lys	Thr	Asn		
		115				120						125					
Leu	Glu	Lys	Arg	Met	Asn	Ala	Glu	Ala	Gly	Ala	Cys	Glu	Asp	Lys	Lys		
	130				135						140						
Arg	Ile	Ala	Thr	Arg	Ala	Lys	Ala	Leu	Asn	Leu	Asp	Ala	Ile	His	Asp		
145				150						155					160		
Thr	Val	His	Glu	Met	Cys	Lys	Asp	Glu	Ala	Arg	His	Gly	Lys	Gly	Phe		
			165						170					175			
Glu	Gly	Leu	Tyr	Asn	Arg	Tyr	Phe	Gly	Lys	Lys							
		180						185									

<210> 5947

<211> 723

<212> PRT

<213> B.fragilis

<400> 5947

Ile	Met	Met	Lys	Arg	Asn	Leu	Leu	Ser	Ala	Ala	Phe	Ala	Leu	Met	Ala		
1				5					10					15			
Leu	Ala	Val	Ser	Ala	Asp	Glu	Gly	Met	Trp	Met	Leu	Thr	Asp	Leu	Lys		
		20						25					30				
Ala	Gln	Asn	Glu	Ala	Ala	Met	Met	Asp	Leu	Gly	Leu	Gln	Ile	Pro	Ile		
		35					40						45				

Glu Glu Val Tyr Asn Pro Asp Gly Ile Ala Leu Lys Asp Ala Val Val
 50 55 60
 His Phe Gly Gly Gly Cys Thr Gly Glu Ile Ile Ser Ala Glu Gly Leu
 65 70 75 80
 Val Leu Thr Asn His His Cys Gly Tyr Gly Ala Ile Gln Gln His Ser
 85 90 95
 Ser Val Asp His Asp Tyr Leu Thr Asn Gly Phe Trp Ala Met Asn Arg
 100 105 110
 Asn Glu Glu Leu Pro Cys Lys Gly Leu Thr Val Thr Phe Ile Asp Arg
 115 120 125
 Ile Leu Asp Val Thr Thr Tyr Val Asn Glu Gln Leu Lys Lys Asp Asp
 130 135 140
 Asp Pro Asn Gly Ile Asn Tyr Leu Ser Pro Lys Tyr Leu Ala Thr Val
 145 150 155 160
 Ala Asp Arg Phe Ala Lys Ala Glu Asn Ile Gln Ile Thr Pro Ala Thr
 165 170 175
 Arg Leu Glu Leu Lys Pro Phe Tyr Gly Gly Asn Lys Tyr Tyr Leu Phe
 180 185 190
 Val Lys Thr Val Tyr Asn Asp Ile Arg Met Val Gly Ala Pro Pro Ser
 195 200 205
 Ser Ile Gly Lys Phe Gly Ala Asp Thr Asp Asn Trp Met Trp Pro Arg
 210 215 220
 His Thr Gly Asp Phe Ser Leu Phe Arg Ile Tyr Ala Asp Lys Asn Gly
 225 230 235 240
 Gln Pro Ala Glu Tyr Ser Lys Asp Asn Val Pro Leu Gln Val Lys Lys
 245 250 255
 His Leu Thr Ile Ser Leu Ala Gly Val Lys Glu Gly Asp Phe Thr Phe
 260 265 270
 Val Met Gly Phe Pro Gly Arg Asn Trp Arg Tyr Met Ile Ser Asp Glu
 275 280 285
 Val Lys Glu Arg Met Gln Thr Thr Asn Phe Met Arg His His Val Arg
 290 295 300
 Glu Ala Arg Gln Ala Val Leu Met Asp Gln Met Leu Lys Asp Pro Ala
 305 310 315 320
 Val Arg Ile His Tyr Ala Ser Lys Tyr Ala Ser Ser Ala Asn Tyr Trp
 325 330 335
 Lys Asn Ala Ile Gly Met Asn Glu Gly Leu Val Arg Leu Lys Val Leu
 340 345 350
 Asp Thr Lys Glu Lys Gln Gln Glu Gln Leu Leu Ala Met Gly Arg Glu
 355 360 365
 Lys Gly Asp Asp Ser Tyr Gln Lys Ala Phe Asp Glu Ile Arg Ser Ile
 370 375 380
 Val Ala His Arg His Asp Ala Met Tyr His Gln Gln Ala Ile Ser Glu
 385 390 395 400
 Ala Leu Val Thr Ala Leu Asp Phe Met Lys Ile Pro Ser Thr Asp Gly
 405 410 415
 Leu Lys Lys Ala Leu Glu Ser Lys Asn Ala Thr Lys Ile Lys Glu Glu
 420 425 430
 Thr Asp Lys Leu Lys Ala Glu Ala Asp Lys Tyr Phe Ala Ser Val Pro
 435 440 445
 Phe Pro Glu Val Glu Arg Leu Val Gly Lys Lys Met Leu Glu Thr Tyr
 450 455 460
 Ala Gly Tyr Ile Pro Glu Asp Gln Gln Ile Gly Ile Phe Lys Val Ile
 465 470 475 480
 Asp Ser Arg Phe Lys Gly Asn Lys Asp Ala Phe Ile Asp Ala Cys Phe
 485 490 495
 Lys Tyr Ser Ile Phe Gly Ser Lys Glu Asn Phe Asn Lys Phe Ile Ala
 500 505 510
 His Pro Thr Leu Asn Lys Leu Asp Lys Asp Trp Met Ile Leu Phe Lys

515 520 525
 Tyr Ser Ile Thr Asp Gly Leu Leu Lys Thr Ala Leu Ala Met Lys Asp
 530 535 540
 Ala Asn Lys Asn Tyr Asp Ala Ala His Lys Val Trp Val Lys Gly Met
 545 550 555 560
 Met Asp Met Arg Gln Val Ala Gly Thr Pro Ile Tyr Pro Asp Ala Asn
 565 570 575
 Ser Thr Leu Arg Leu Thr Tyr Gly Gln Val Leu Pro Tyr Glu Pro Ala
 580 585 590
 Asp Gly Thr Val Tyr Asn Tyr Tyr Thr Thr Leu Lys Gly Val Met Gln
 595 600 605
 Lys Glu Asp Pro Asp Asn Trp Glu Phe Val Val Pro Gln Lys Leu Lys
 610 615 620
 Gln Leu Tyr His Ala Lys Asp Phe Gly His Tyr Ala Met Glu Asn Gly
 625 630 635 640
 Glu Met Pro Val Cys Phe Ile Val Asn Thr Asp Asn Thr Gly Gly Asn
 645 650 655
 Ser Gly Ser Pro Val Phe Asn Gly Lys Gly Gln Leu Ile Gly Thr Gly
 660 665 670
 Phe Asp Arg Asn Tyr Glu Gly Leu Thr Gly Asp Ile Ala Phe Arg Pro
 675 680 685
 Ser Ser Gln Arg Ala Ala Val Val Asp Ile Arg Tyr Thr Leu Phe Ile
 690 695 700
 Ile Asp Lys Tyr Ala Gly Ala Ser His Ile Ile Lys Glu Leu Asp Ile
 705 710 715 720
 Val Glu Glu

<210> 5948
 <211> 519
 <212> PRT
 <213> B.fragilis

<400> 5948
 Asn Thr Met Asn Thr Phe Thr Leu Gly Leu Ile Val Ile Ala Tyr Leu
 1 5 10 15
 Leu Ser Leu Ala Tyr Leu Gly Phe Leu Gly Tyr Lys Lys Thr Ser Ser
 20 25 30
 Ala Ser Asp Tyr Leu Val Gly Gly Arg Gln Met Asn Pro Phe Val Met
 35 40 45
 Ala Leu Ser Tyr Gly Ala Thr Phe Ile Ser Ala Ser Ala Ile Val Gly
 50 55 60
 Phe Gly Gly Val Ala Ala Ala Phe Gly Met Gly Ile Gln Trp Leu Cys
 65 70 75 80
 Phe Leu Asn Met Phe Ile Gly Val Val Ile Ala Phe Ile Phe Phe Gly
 85 90 95
 Leu Gln Thr Arg Arg Met Gly Ala Lys Leu Asn Val Ser Thr Phe Pro
 100 105 110
 Gln Leu Leu Gly Arg His Tyr Arg Ser Arg Gly Ile Gln Val Phe Val
 115 120 125
 Ala Ala Val Ile Phe Leu Gly Met Pro Leu Tyr Ala Ala Val Val Met
 130 135 140
 Lys Gly Gly Ala Val Phe Ile Glu Gln Ile Phe Gln Ile Asp Phe Asn
 145 150 155 160
 Ile Ser Leu Leu Ile Phe Thr Leu Val Ile Ala Ala Tyr Val Ile Ala
 165 170 175
 Gly Gly Met Lys Gly Val Met Tyr Thr Asp Ala Leu Gln Ala Val Ile
 180 185 190
 Met Phe Gly Cys Met Leu Phe Leu Leu Phe Ser Leu Tyr Arg Val Leu

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      195              200              205
Asp Met Gly Phe Thr Glu Ala Asn Gln Ala Leu Thr Asp Ile Ala Pro
  210              215              220
Leu Val Pro Glu Lys Phe Lys Ala Leu Gly His Gln Gly Trp Thr Ala
  225              230              235              240
Met Pro Val Thr Gly Ser Pro Gln Trp Tyr Thr Leu Val Thr Ser Leu
      245              250              255
Ile Leu Gly Val Gly Ile Gly Cys Leu Ala Gln Pro Gln Leu Val Val
      260              265              270
Arg Phe Met Thr Val Glu Ser Ser Lys Gln Leu Asn Arg Gly Val Phe
      275              280              285
Ile Gly Cys Phe Phe Leu Ile Ile Thr Val Gly Ala Ile Tyr His Ala
      290              295              300
Gly Ala Leu Ser Asn Leu Phe Phe Leu Lys Thr Glu Gly Val Val Ala
  305              310              315              320
Thr Glu Ala Val Lys Asp Met Asp Lys Ile Ile Pro Tyr Phe Ile Asn
      325              330              335
Lys Ala Met Pro Asp Trp Phe Ala Ala Leu Phe Met Leu Cys Ile Leu
      340              345              350
Ser Ala Ser Met Ser Thr Leu Ser Ser Gln Phe His Thr Met Gly Ala
      355              360              365
Ser Val Gly Ser Asp Ile Tyr Gly Thr Tyr Lys Pro Arg Ser Arg Gly
  370              375              380
Lys Leu Thr Asn Val Ile Arg Leu Gly Val Leu Phe Ser Ile Leu Val
  385              390              395              400
Ser Tyr Ile Ile Cys Tyr Met Leu Pro Asn Asp Ile Ile Ala Arg Gly
      405              410              415
Thr Ser Ile Phe Met Gly Ile Cys Ala Ala Ala Phe Leu Pro Ala Tyr
      420              425              430
Phe Cys Ala Leu Tyr Trp Arg Arg Ala Thr Arg Gln Gly Val Met Ala
      435              440              445
Ser Leu Trp Ile Gly Thr Ile Gly Ser Leu Phe Ala Leu Ala Phe Leu
  450              455              460
His Gln Lys Glu Ala Ala Ala Met Gly Val Cys Arg Trp Leu Phe Gly
  465              470              475              480
Lys Asp Val Leu Ile Glu Ala Tyr Pro Phe Pro Met Ile Asp Pro Ile
      485              490              495
Leu Phe Ala Leu Pro Leu Ser Val Ala Ala Val Ile Ile Val Ser Leu
      500              505              510
Leu Thr Glu Lys Gly Lys Lys
      515

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<210> 5949

<211> 500

<212> PRT

<213> B.fragilis

<400> 5949

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Thr Asn Lys Lys Leu Ile Arg Asn Tyr Lys Met Lys Lys Ile Ile Leu
1              5              10              15
Leu Ile Val Ser Val Trp Met Cys Val Ser Cys Gly Asn Leu Glu Glu
      20              25              30
Met Asn Ile Asp Pro Asp Asn Ala Thr Gln Thr His Pro Lys Leu Leu
      35              40              45
Leu Thr Gln Ile Cys Met Asn Ala Phe Lys Arg Gly Thr Asp Gly Met
      50              55              60
Tyr Ala Thr Lys Lys Val Ile Gln Ala Asp Gly Glu Ser Ala Asp Gln
      65              70              75              80
Tyr Tyr Lys Trp Thr Arg Gly Ser Phe Gly Tyr Tyr Asp Asn Leu Arg

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				85					90					95	
Asn	Val	Gln	Lys	Met	Gly	Glu	Glu	Ala	Glu	Arg	Val	Asn	Ala	Pro	Val
			100					105					110		
Tyr	Thr	Ala	Leu	Thr	Lys	Phe	Phe	Arg	Ala	Tyr	Tyr	Phe	Tyr	Glu	Leu
		115					120					125			
Thr	Leu	Arg	Phe	Gly	Asp	Ile	Pro	Tyr	Ser	Gln	Ala	Leu	Lys	Gly	Glu
	130					135					140				
Lys	Glu	Glu	Ile	Tyr	Thr	Pro	Glu	Tyr	Asp	Ala	Gln	Glu	Asp	Val	Phe
145					150				155						160
Ala	Gly	Ile	Leu	Gln	Glu	Leu	Arg	Glu	Ala	Asp	Glu	Ile	Leu	Ala	Asn
				165				170						175	
Asp	Ala	Ser	Val	Ile	Asp	Gly	Asp	Ile	Ile	Tyr	Asn	Gly	Asn	Ser	Thr
		180						185					190		
Gln	Trp	Arg	Lys	Leu	Ile	Asn	Ser	Phe	Arg	Leu	Lys	Val	Leu	Met	Thr
	195					200						205			
Leu	Ser	Asn	His	Thr	Thr	Val	Gly	Asn	Ile	Asn	Ile	Ala	Ser	Glu	Phe
	210					215					220				
Lys	Asn	Ile	Ala	Thr	Asn	Ser	Pro	Leu	Met	Asn	Ser	Leu	Ala	Asp	Asn
225					230					235					240
Gly	Gln	Leu	Val	Tyr	Leu	Asp	Gln	Gln	Gly	Asn	Arg	Tyr	Pro	Gln	Phe
				245					250					255	
Asn	Ala	Gln	Trp	Ser	Gly	Tyr	Tyr	Met	Asp	Asp	Thr	Phe	Ile	Gln	Arg
		260						265					270		
Met	Arg	Glu	Arg	Arg	Asp	Pro	Arg	Leu	Phe	Ile	Phe	Ser	Ala	Gln	Thr
	275						280						285		
Asn	Lys	Gly	Lys	Thr	Glu	Gly	Lys	Pro	Ile	Asp	Asp	Phe	Ser	Ser	Tyr
	290					295					300				
Glu	Gly	Gly	Asp	Pro	Ala	Ala	Pro	Tyr	Ser	Asp	Ala	Ile	Ile	Lys	Val
305					310					315					320
Ser	Glu	Gly	Thr	Ile	Ser	Pro	Ile	Asn	Asp	Arg	Phe	Arg	Thr	Asp	Pro
				325					330					335	
Ile	Val	Glu	Pro	Thr	Met	Leu	Met	Gly	Tyr	Ala	Glu	Leu	Gln	Gln	Ile
		340						345					350		
Leu	Ala	Glu	Ala	Val	Val	Arg	Gly	Trp	Ile	Ser	Gly	Asn	Ala	Gln	Thr
	355						360					365			
Tyr	Tyr	Glu	Lys	Gly	Ile	Arg	Ala	Ser	Phe	Ser	Phe	Tyr	Glu	Thr	His
	370					375					380				
Ala	Lys	Asp	Tyr	Ala	Gly	Tyr	Leu	Asn	Glu	Asn	Ala	Val	Ala	Gln	Tyr
385					390					395					400
Leu	Lys	Glu	Pro	Leu	Val	Asp	Phe	Thr	Gln	Ala	Ser	Gly	Thr	Glu	Glu
				405					410					415	
Gln	Ile	Glu	Arg	Ile	Ile	Met	Gln	Lys	Tyr	Leu	Val	Thr	Phe	Tyr	Gln
			420					425					430		
Gly	Asn	Trp	Asp	Ser	Phe	Tyr	Glu	Gln	Leu	Arg	Thr	Gly	Tyr	Pro	Asp
		435					440					445			
Phe	Arg	Arg	Pro	Ala	Gly	Thr	Glu	Ile	Pro	Lys	Arg	Trp	Met	Tyr	Pro
	450					455					460				
Gln	Gly	Glu	Tyr	Asp	Asn	Asn	Gly	Thr	Asn	Val	Glu	Thr	Ala	Ile	Thr
465					470					475					480
Arg	Gln	Phe	Gly	Ala	Gly	Asn	Asp	Lys	Ile	Asn	Gln	Ala	Thr	Trp	Trp
				485					490					495	
Gln	Lys	Lys	Ser												
			500												

<210> 5950

<211> 670

<212> PRT

<213> B.fragilis

<400> 5950

Arg Met Lys Lys Leu Ser Ser Phe Leu Leu Leu Leu Leu Val Val Phe
 1 5 10 15
 Thr Ala Gln Ala Gln Ile Gln Glu Pro Val Lys Phe Lys Thr Glu Leu
 20 25 30
 Lys Thr Leu Ser Gly Ala Glu Ala Glu Ile Val Phe Thr Gly Thr Ile
 35 40 45
 Asp Ala Gly Trp His Val Tyr Ser Thr Asp Leu Gly Asp Gly Gly Pro
 50 55 60
 Ile Ser Ala Thr Phe Asn Val Glu Lys Met Ser Gly Ala Glu Val Val
 65 70 75 80
 Gly Lys Leu Thr Pro Arg Gly Lys Glu Val Ser Asp Phe Asp Lys Leu
 85 90 95
 Phe Glu Met Lys Val Arg Tyr Phe Glu Lys Thr Ala Gln Phe Ile Gln
 100 105 110
 Lys Ile Lys Phe Thr Gly Ser Asp Tyr Ser Ile Glu Gly Tyr Leu Glu
 115 120 125
 Tyr Gly Ala Cys Asn Asp Glu Asn Cys Leu Pro Pro Thr Gln Val Pro
 130 135 140
 Phe Lys Phe Ser Gly Lys Ala Ala Ala Thr Ala Glu Val Ser Ala Lys
 145 150 155 160
 Glu Thr Pro Ala Thr Pro Val Lys Glu Pro Val Ala Thr Val Thr Asp
 165 170 175
 Ser Ile Val Glu Pro Thr Ala Thr Thr Val Thr Thr Ala Ile Gly Ser
 180 185 190
 Val Asp Leu Trp Lys Pro Val Ile Asn Asp Leu Lys Lys Phe Gly Glu
 195 200 205
 Ala Asn Ser Gln Glu Asp Met Ser Trp Ile Tyr Ile Phe Ile Thr Gly
 210 215 220
 Phe Leu Gly Gly Leu Leu Ala Leu Phe Thr Pro Cys Val Trp Pro Ile
 225 230 235 240
 Ile Pro Met Thr Val Ser Phe Phe Leu Lys Arg Ser Lys Asp Lys Lys
 245 250 255
 Lys Gly Ile Arg Asp Ala Trp Thr Tyr Gly Ala Ser Ile Val Val Ile
 260 265 270
 Tyr Val Ala Leu Gly Leu Ala Ile Thr Leu Ile Phe Gly Ala Ser Ala
 275 280 285
 Leu Asn Ala Leu Ser Thr Asn Ala Val Phe Asn Ile Leu Phe Cys Leu
 290 295 300
 Met Leu Ile Val Phe Ala Ala Ser Phe Phe Gly Ala Phe Glu Leu Thr
 305 310 315 320
 Leu Pro Ala Lys Trp Ser Thr Ala Val Asp Ser Lys Ala Glu Ala Thr
 325 330 335
 Ser Gly Leu Leu Ser Ile Phe Leu Met Ala Phe Thr Leu Ser Leu Val
 340 345 350
 Ser Phe Ser Cys Thr Gly Pro Ile Ile Gly Phe Leu Leu Val Gln Val
 355 360 365
 Ser Thr Thr Gly Ser Val Val Ala Pro Ala Ile Gly Met Leu Gly Phe
 370 375 380
 Ala Ile Ala Leu Ala Leu Pro Phe Thr Leu Phe Ala Leu Phe Pro Ser
 385 390 395 400
 Trp Leu Lys Ser Met Pro Lys Ser Gly Gly Trp Met Asn Val Ile Lys
 405 410 415
 Val Thr Leu Gly Phe Leu Glu Leu Ala Phe Ala Leu Lys Phe Leu Ser
 420 425 430
 Val Ala Asp Leu Ala Tyr Gly Trp Arg Ile Leu Asp Arg Glu Thr Phe
 435 440 445
 Leu Ala Leu Trp Ile Val Ile Phe Ala Leu Leu Gly Phe Tyr Leu Leu
 450 455 460

Gly Lys Ile Lys Phe Pro His Asp Asp Asp Thr Lys Val Ser Val
 465 470 475 480
 Ser Arg Phe Phe Met Ala Leu Val Ser Leu Ala Phe Ala Val Tyr Met
 485 490 495
 Val Pro Gly Leu Trp Gly Ala Pro Leu Lys Ala Val Ser Ala Phe Ala
 500 505 510
 Pro Pro Met Lys Thr Gln Asp Phe Asn Leu Tyr Thr Asn Glu Val His
 515 520 525
 Ala Lys Phe Asp Asp Tyr Asp Leu Gly Met Glu Tyr Ala Arg Gln His
 530 535 540
 Asn Lys Pro Val Met Leu Asp Phe Thr Gly Tyr Gly Cys Val Asn Cys
 545 550 555 560
 Arg Lys Met Glu Leu Ala Val Trp Thr Asp Pro Lys Val Ser Ser Ile
 565 570 575
 Ile Asn Asn Asp Tyr Val Leu Ile Thr Leu Tyr Val Asp Asn Lys Thr
 580 585 590
 Pro Leu Thr Glu Pro Val Lys Ile Met Glu Asn Gly Thr Glu Arg Thr
 595 600 605
 Leu Arg Thr Val Gly Asp Lys Trp Ser Tyr Leu Gln Arg Val Lys Phe
 610 615 620
 Gly Ala Asn Ala Gln Pro Phe Tyr Val Leu Ile Asp Asn Glu Gly Asn
 625 630 635 640
 Pro Leu Asn Lys Ser Tyr Ala Tyr Asp Glu Asp Ile Ser Lys Tyr Ile
 645 650 655
 Asn Phe Leu Gln Thr Gly Leu Glu Asn Tyr Arg Lys Glu Lys
 660 665 670

<210> 5951

<211> 343

<212> PRT

<213> B.fragilis

<400> 5951

Tyr Met Trp Lys Lys Leu Ser Leu Tyr Val Cys Leu Ile Thr Ile Leu
 1 5 10 15
 Cys Ser Cys Gln Lys Gln Arg Ser Ala Tyr Ala Pro Pro Thr Phe Pro
 20 25 30
 Glu Val Lys Lys Ile His Ala His Arg Leu Ser Asp Glu Leu Leu Ile
 35 40 45
 Ser Tyr Leu Leu Asp Met Ala Val Ser Glu Asp Tyr Ile Phe Ile Leu
 50 55 60
 Ala Leu Ala Asp Asn Ala Trp Leu Gln Val Tyr Asp Lys Thr Thr Gly
 65 70 75 80
 Gln Leu Leu Gly Ser Phe Val Thr Arg Gly Gln Gly Pro Gly Glu Ala
 85 90 95
 Thr Thr Ala Asn Met Cys Tyr Tyr Asn Ala Arg Glu Lys Lys Ile Ser
 100 105 110
 Val Tyr Asp Glu Ser Ser Met Lys Leu Leu Thr Tyr Gln Phe Asp Lys
 115 120 125
 Asp Ala Asp Asn Trp Gly Ala Leu Ile Glu Glu Trp Ser Phe Tyr Asp
 130 135 140
 Leu Gly Gly Thr Leu Arg Arg Val Trp Glu Leu Arg Asn Gly Arg Phe
 145 150 155 160
 Leu Val Asp Gly Gln Leu Gly Thr Lys Ser Asp Gln Gln Lys Arg Phe
 165 170 175
 Gln Met Leu Ala Asp Ala Lys Val Val Ala Asp Tyr Asn Asp Phe Pro
 180 185 190
 Ile Asp Thr Pro Lys Glu Arg Ser Val Trp Ser Ser Pro Ala Ile Ala
 195 200 205

Ile Ser Pro Asp Cys Lys Lys Met Ala Val Gly Thr Leu Tyr Gly Gly
 210 215 220
 Ile Leu Glu Leu Phe Asp Leu Ser Gln Asn Ile Glu Leu Arg Ala Ile
 225 230 235 240
 Arg Lys Phe Tyr Pro Pro Val Val Gln Tyr Leu Ser Gly Thr Ile Gln
 245 250 255
 Asn Thr Glu Glu Thr Val Trp Gly Phe Ser Ala Leu Cys Ala Thr Asp
 260 265 270
 Glu Arg Ile Tyr Ser Val Phe Ile Gly Asp Lys Asn Pro Asn Leu Phe
 275 280 285
 Asn Asn Leu Ser Val Phe Asp Trp Asp Gly Arg Glu Leu Ile Lys Tyr
 290 295 300
 Asn Thr Asp Cys Leu Val Leu Arg Ile Cys Ala Ser Thr Gln Glu Pro
 305 310 315 320
 Asn Lys Leu Tyr Gly Ile Ala Phe Ser Glu Thr His Glu Phe Tyr Leu
 325 330 335
 Val Ser Phe Ser Leu Gly Ser
 340

<210> 5952

<211> 258

<212> PRT

<213> B.fragilis

<400> 5952

Asn Asp Tyr Leu Cys Glu Arg Phe Glu Asn Arg Asp Tyr Val Phe Leu
 1 5 10 15
 Ile Ile Ser Leu Lys Lys Glu Leu Ile Met Thr Tyr Ser His Glu Val
 20 25 30
 Glu His Met Cys Val Val Lys Lys Gly Pro Asn His Gly Pro Ala Pro
 35 40 45
 Ile Pro Glu Glu Gly Lys Trp Val Lys Ser Lys Glu Ile Val Asp Ile
 50 55 60
 Ser Gly Leu Thr His Gly Val Gly Trp Cys Ala Pro Gln Gln Gly Ala
 65 70 75 80
 Cys Lys Leu Thr Leu Asn Val Lys Glu Gly Ile Ile Gln Glu Ala Leu
 85 90 95
 Val Glu Thr Ile Gly Cys Ser Gly Met Thr His Ser Ala Ala Met Ala
 100 105 110
 Ala Glu Ile Leu Pro Gly Lys Thr Ile Leu Glu Ala Leu Asn Thr Asp
 115 120 125
 Leu Val Cys Asp Ala Ile Asn Thr Ala Met Arg Glu Leu Phe Leu Gln
 130 135 140
 Ile Val Tyr Gly Arg Thr Gln Ser Ala Phe Ser Glu Gly Gly Leu Ile
 145 150 155 160
 Ile Gly Ala Gly Leu Glu Asp Leu Gly Lys Gly Leu Arg Ser Gln Val
 165 170 175
 Gly Thr Leu Tyr Gly Thr Leu Ala Lys Gly Pro Arg Tyr Leu Glu Met
 180 185 190
 Ala Glu Gly Tyr Ile Lys Thr Ile Ala Leu Asp Lys Asn Asp Glu Ile
 195 200 205
 Cys Gly Tyr Glu Phe Val His Met Gly Lys Phe Met Asp Glu Ile Lys
 210 215 220
 Lys Gly Thr Asp Ala Asn Glu Ala Leu Lys Lys Val Thr Gly Thr Tyr
 225 230 235 240
 Gly Arg Phe Thr Ala Glu Gln Gly Ala Val Lys His Ile Asp Pro Arg
 245 250 255
 His Glu

<210> 5953
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 5953

Leu	Phe	Ser	Asp	Met	Lys	Leu	Asn	Lys	Thr	Asp	Tyr	Met	Leu	Glu	Arg
1				5					10					15	
Thr	Ser	Asp	Gly	Gly	Tyr	Tyr	Ala	Trp	Leu	Thr	Val	Asn	Met	Gln	Cys
			20					25					30		
Asn	Ala	Tyr	Gly	Asp	Ser	Pro	Glu	Glu	Ala	Val	Lys	Asn	Leu	Glu	Gln
		35					40					45			
Thr	Met	Glu	Asp	Leu	Val	Glu	Glu	Met	Tyr	Leu	Val	Glu	Asp	Phe	Ile
	50					55					60				

<210> 5954
 <211> 193
 <212> PRT
 <213> B.fragilis

<400> 5954

Ile	Asn	Val	Glu	Ser	Met	Thr	Ile	Met	Lys	Leu	Arg	Leu	Gly	Val	Arg
1				5					10					15	
Gly	Met	Met	Trp	Leu	Thr	Leu	Val	Ile	Met	Met	Trp	Gly	Ile	Ile	Ser
			20					25					30		
Cys	Arg	Thr	Gln	Glu	Glu	Lys	Cys	Leu	Glu	Glu	Val	Leu	Ser	Leu	Pro
		35					40					45			
Leu	Ala	Asn	Lys	Glu	Glu	Leu	Gln	Lys	Val	Leu	Asp	His	Tyr	Lys	Asp
	50					55					60				
Asp	Ser	Leu	Lys	Tyr	Gln	Ala	Val	Cys	Phe	Leu	Ile	Arg	Asn	Met	Pro
65					70				75					80	
Phe	His	Ala	Gly	Tyr	Glu	Gly	Asn	Ala	Leu	Lys	Tyr	Tyr	Tyr	Gln	Tyr
			85					90						95	
Phe	Asp	Ile	Tyr	Ala	Gln	Gly	Lys	Leu	Gly	Pro	His	Glu	Val	Ile	Asp
		100						105					110		
Ser	Leu	Lys	Glu	Asn	Ser	Phe	Ser	Val	Ser	Gln	Leu	Lys	Arg	Ile	Glu
		115					120					125			
Asp	Ile	Ala	Asn	Ile	Asp	Ser	Ser	Leu	Leu	Val	Gln	Asn	Val	Asp	Trp
	130					135					140				
Ala	Phe	Lys	Val	Trp	Arg	Glu	Gln	Pro	Trp	Gly	Lys	Asn	Val	Ser	Phe
145					150					155				160	
Asp	Asn	Phe	Cys	Glu	Phe	Val	Leu	Pro	Tyr	Arg	Leu	Gly	Asp	Glu	Pro
			165						170				175		
Leu	Gly	Phe	Trp	Arg	Glu	Asp	Ile	Tyr	Lys	Arg	Tyr	Asn	Pro	Ile	Leu
			180					185					190		

Asp

<210> 5955
 <211> 341
 <212> PRT
 <213> B.fragilis

<400> 5955

Gly	Gly	Lys	Glu	Ile	Met	Ile	Arg	Glu	Val	Lys	Phe	Glu	Ser	Gln	Asp
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Arg	Arg	Ile	Lys	Gly	Ile	Ile	Glu	Ala	Leu	Asn	Ala	Asn	Gly	Ile	Lys
			20					25					30		

Asp Ile Glu Glu Ala Asn Ala Ile Cys Glu Ala Ala Gly Val Asp Pro
 35 40 45
 Tyr Lys Thr Cys Glu Glu Thr Gln Pro Ile Cys Phe Glu Asn Ala Lys
 50 55 60
 Trp Ala Tyr Val Val Gly Ala Ala Ile Ala Ile Lys Lys Gly Cys Lys
 65 70 75 80
 Asn Ala Ala Asp Ala Ala Glu Ala Ile Gly Ile Gly Leu Gln Ala Phe
 85 90 95
 Cys Ile Pro Gly Ser Val Ala Asp Asp Arg Lys Val Gly Ile Gly His
 100 105 110
 Gly Asn Leu Ala Ala Met Leu Leu Arg Glu Glu Thr Lys Cys Phe Ala
 115 120 125
 Phe Leu Ala Gly His Glu Ser Phe Ala Ala Ala Glu Gly Ala Ile Lys
 130 135 140
 Ile Ala Ala Lys Ala Asp Lys Val Arg Lys Glu Pro Leu Arg Cys Ile
 145 150 155 160
 Leu Asn Gly Leu Gly Lys Asp Ala Ala Gln Ile Ile Ser Arg Ile Asn
 165 170 175
 Gly Phe Thr Tyr Val Gln Thr Gln Phe Asp Tyr Phe Thr Gly Glu Leu
 180 185 190
 Lys Val Val Arg Glu Ile Ala Tyr Ser Asp Gly Pro Arg Ala Lys Val
 195 200 205
 Lys Cys Tyr Gly Ala Asp Asp Val Arg Glu Gly Val Ala Ile Met Trp
 210 215 220
 Lys Glu Gly Val Asp Val Ser Ile Thr Gly Asn Ser Thr Asn Pro Thr
 225 230 235 240
 Arg Phe Gln His Pro Val Ala Gly Thr Tyr Lys Lys Glu Arg Val Leu
 245 250 255
 Ala Gly Lys Pro Tyr Phe Ser Val Ala Ser Gly Gly Gly Thr Gly Arg
 260 265 270
 Thr Leu His Pro Asp Asn Met Ala Ala Gly Pro Ala Ser Tyr Gly Met
 275 280 285
 Thr Asp Thr Met Gly Arg Met His Ser Asp Ala Gln Phe Ala Gly Ser
 290 295 300
 Ser Ser Val Pro Ala His Val Glu Met Met Gly Phe Leu Gly Ile Gly
 305 310 315 320
 Asn Asn Pro Met Val Gly Cys Thr Val Ala Cys Ala Val Asp Val Ala
 325 330 335
 Gln Ala Leu Ala Lys
 340

<210> 5956

<211> 116

<212> PRT

<213> B.fragilis

<400> 5956

Lys Met Lys Glu Tyr Ile Asp Val Leu Lys Lys Trp Lys Asp Phe Asp
 1 5 10 15
 Gly Arg Ala Arg Arg Arg Glu Tyr Trp Met Phe Val Leu Phe Met Ala
 20 25 30
 Ile Phe Ala Ile Val Ala Ser Ile Ile Asp Ala Ile Leu Gly Thr Ile
 35 40 45
 Cys Val Phe Val Gly Ile Tyr Tyr Leu Ala Met Leu Leu Pro Met Ile
 50 55 60
 Ala Val Ser Ile Arg Arg Met His Asp Ile Gly Lys Ser Gly Trp Trp
 65 70 75 80
 Leu Phe Ile Thr Phe Val Pro Val Ile Gly Ser Leu Trp Tyr Leu Phe
 85 90 95

Leu Thr Ile Gln Asp Gly Gln Pro Gly Ser Asn Gln Tyr Gly Glu Asn
 100 105 110
 Pro Lys Gly Ile
 115

<210> 5957
 <211> 351
 <212> PRT
 <213> B.fragilis

<400> 5957

Ile Gly Gly Asp Lys Lys Met Lys Thr Leu Gln Glu Leu Thr Arg Pro
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 Asn Ile Trp Arg Leu Lys Pro Tyr Ser Ser Ala Arg Asp Glu Tyr Ser
 20 25 30
 Gly Ala Ala Ala Ser Val Phe Leu Asp Ala Asn Glu Asn Pro Tyr Asn
 35 40 45
 Leu Pro His Asn Arg Tyr Pro Asp Pro Met Gln Arg Asp Leu Lys Leu
 50 55 60
 Glu Leu Ser Lys Ile Lys Lys Val Ala Pro Ala His Ile Phe Leu Gly
 65 70 75 80
 Asn Gly Ser Asp Glu Ala Ile Asp Leu Val Phe Arg Ala Phe Cys Glu
 85 90 95
 Pro Gly Arg Asp Asn Val Val Ala Ile Asp Pro Thr Tyr Gly Met Tyr
 100 105 110
 Gln Val Cys Ala Asp Val Asn Asp Val Glu Tyr Arg Lys Val Leu Leu
 115 120 125
 His Asp Asp Phe Gln Phe Ser Ala Asp Glu Leu Leu Ala Val Ala Asp
 130 135 140
 Glu Arg Thr Lys Met Ile Phe Leu Cys Ser Pro Asn Asn Pro Thr Gly
 145 150 155 160
 Asn Asp Leu Leu Arg Ser Glu Ile Ile Lys Val Ile Asn Asp Phe Glu
 165 170 175
 Gly Leu Val Ile Leu Asp Glu Ala Tyr Asn Asp Phe Ser Asp Glu Pro
 180 185 190
 Ser Phe Leu Ser Glu Leu Asp Lys Tyr Pro Asn Leu Ile Ile Leu Gln
 195 200 205
 Thr Phe Ser Lys Ala Phe Gly Cys Ala Ala Ile Arg Leu Gly Met Ala
 210 215 220
 Phe Ala Ser Glu Gly Ile Ile Gly Val Leu Asn Lys Ile Lys Tyr Pro
 225 230 235 240
 Tyr Asn Val Asn Gln Leu Thr Gln Gln Gln Ala Ile Glu Met Leu His
 245 250 255
 Lys Tyr Tyr Glu Ile Glu Arg Trp Val Lys Thr Leu Lys Glu Glu Arg
 260 265 270
 Gly Tyr Leu Glu Glu Ala Phe Val Glu Leu Pro Trp Val Leu Gln Val
 275 280 285
 Phe Pro Ser Asn Ala Asn Phe Phe Leu Ala Arg Val Thr Asp Ala Val
 290 295 300
 Lys Ile Tyr Asn Tyr Leu Val Gly Glu Gly Ile Ile Val Arg Asn Arg
 305 310 315 320
 Asn Ser Ile Ser Leu Cys Gly Asn Cys Leu Arg Val Thr Val Gly Thr
 325 330 335
 Arg Ala Glu Asn Ala Lys Leu Ile Gly Ala Leu Lys Lys Tyr Gln
 340 345 350

<210> 5958
 <211> 197
 <212> PRT

<213> B.fragilis

<400> 5958

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Asn Ile Lys Leu Arg Asn Asn Leu Asn Tyr Lys Ala Leu Phe Gln Ile
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Ala Met Ser Leu Ile Ser Ser Pro Ala Lys Ala Trp Glu Glu Ile Arg
      20      25      30
Leu Glu Asp Arg Arg Ala Val Leu Thr Val Phe Val Tyr Pro Met Ile
      35      40      45
Gly Leu Cys Gly Leu Ser Val Phe Ile Gly Ala Leu Trp Thr Asn Gly
      50      55      60
Trp Gly Gly Pro Gln Ser Phe Gln Leu Ala Met Thr Gln Cys Cys Ala
65      70      75      80
Val Ala Val Ala Leu Phe Gly Gly Tyr Phe Leu Ala Ala Tyr Ala Ile
      85      90      95
Asn Gln Met Gly Ile Lys Met Phe Gly Met Thr Asn Asp Ile Pro Leu
      100     105     110
Ala Gln Gln Phe Ala Gly Tyr Ala Leu Val Val Thr Phe Leu Leu His
      115     120     125
Ile Val Thr Gly Leu Leu Pro Asp Phe Ser Ile Ile Gly Trp Leu Leu
      130     135     140
Gln Phe Tyr Ile Val Tyr Val Val Trp Glu Gly Ala Arg Val Val Met
145     150     155     160
Leu Val Glu Glu Lys Asn Arg Leu Arg Tyr Thr Ile Phe Ser Ser Ile
      165     170     175
Leu Leu Ile Leu Cys Pro Ala Val Ile Gln Val Val Phe Asn Lys Leu
      -180     185     190
Thr Ala Ile Leu Asn
      195

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<210> 5959

<211> 724

<212> PRT

<213> B.fragilis

<400> 5959

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Ser Asn Leu Cys Ile Phe Val Lys Ile Glu Leu Ile His Tyr Ile Ile
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Lys Ser His Lys Asn Met Lys Lys Met Leu Met Ala Ala Gly Met Ala
      20      25      30
Ala Val Met Thr Ala Cys Gly Thr Ala Gly Gln Lys Ala Ala Thr Asp
      35      40      45
Ala Gly Asn Pro Phe Leu Ala Glu Tyr Ser Thr Pro Phe Gly Val Pro
      50      55      60
Pro Phe Asp Leu Ile Lys Val Glu His Tyr Lys Glu Ala Phe Leu Lys
65      70      75      80
Gly Met Glu Glu Gln Lys Lys Glu Ile Asp Ala Ile Val Asn Gln Arg
      85      90      95
Ser Val Pro Asp Phe Asp Asn Thr Ile Ala Ala Phe Asp Gln Ser Gly
      100     105     110
Glu Leu Leu Asn Lys Val Ser Thr Val Phe Ser Gly Leu Asn Ser Cys
      115     120     125
Asn Thr Asn Asp Glu Met Gln Ala Phe Asn Lys Glu Ile Thr Pro Leu
      130     135     140
Leu Ser Ala His Arg Asp Asp Ile Ser Leu Asn Pro Ala Leu Phe Ala
145     150     155     160
Arg Val Lys Glu Val Tyr Glu Arg Arg Glu Lys Leu Gly Leu Asp Lys
      165     170     175
Glu Gln Asn Lys Leu Leu Glu Glu Thr Tyr Lys Lys Phe Val Arg Gly

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[illegible]

Tyr Ser Tyr Ile Trp Ala Glu Val Leu Asp Ser Asp Ala Phe Glu Ala
 660 665 670
 Tyr Lys Glu Thr Gly Asp Leu Phe Asn Gln Glu Val Ala Ser Arg Phe
 675 680 685
 Arg Arg Tyr Ile Leu Thr Pro Gly Gly Ile Asp Asp Ala Met Asp Met
 690 695 700
 Tyr Lys Asn Phe Arg Gly Lys Glu Pro Gly Ile Glu Pro Leu Leu Arg
 705 710 715 720
 Asn Arg Gly Leu

<210> 5960
 <211> 245
 <212> PRT
 <213> B.fragilis

<400> 5960
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 Leu Tyr Leu Ser Ala Lys Ala Val Phe Tyr Ser Cys Lys Ile Thr Leu
 20 25 30
 Phe Val Ser Asn Ile His Tyr Lys Arg Met Leu Ile Ile Gly Ile Ala
 35 40 45
 Gly Gly Thr Gly Ser Gly Lys Thr Thr Val Val Arg Lys Ile Ile Glu
 50 55 60
 Ser Leu Pro Ala Gly Glu Val Val Leu Leu Pro Gln Asp Ser Tyr Tyr
 65 70 75 80
 Lys Asp Ser Ser His Val Pro Val Glu Glu Arg Gln Asn Ile Asn Phe
 85 90 95
 Asp His Pro Asp Ala Phe Glu Trp Ser Leu Leu Ser Lys His Val Ala
 100 105 110
 Leu Leu Lys Glu Gly Lys Cys Ile Glu Gln Pro Thr Tyr Ser Tyr Leu
 115 120 125
 Thr Cys Thr Arg Gln Pro Glu Thr Ile His Ile Glu Pro Arg Glu Val
 130 135 140
 Val Ile Ile Glu Gly Ile Leu Ala Leu Cys Asp Lys Lys Leu Arg Asn
 145 150 155 160
 Met Met Asp Leu Lys Ile Phe Val Asp Ala Asp Pro Asp Glu Arg Leu
 165 170 175
 Ile Arg Val Ile Gln Arg Asp Val Val Glu Arg Gly Arg Thr Ala Glu
 180 185 190
 Ala Val Met Glu Arg Tyr Thr Arg Val Leu Lys Pro Met His Leu Gln
 195 200 205
 Phe Ile Glu Pro Cys Lys Arg Tyr Ala Asp Leu Ile Val Pro Glu Gly
 210 215 220
 Gly Ser Asn Gln Val Ala Ile Asn Ile Leu Thr Met Tyr Ile Lys Lys
 225 230 235 240
 His Ile Gly Arg Pro
 245

<210> 5961
 <211> 464
 <212> PRT
 <213> B.fragilis

<400> 5961
 Ala Met Lys Arg His Leu Ile Ile Tyr Ser Leu Leu Phe Leu Leu Phe
 1 5 10 15
 Cys Val Leu Ser Cys Arg Asn Lys Gln Ala Val Ala Ile Glu Glu Ser

1. The first part of the document is a list of names and their corresponding dates. The names are: "The first part of the document is a list of names and their corresponding dates."

<210>	5962
<211>	476
<212>	PRT

<213> B.fragilis

<400> 5962

Ser	Asn	Ile	Arg	Leu	Val	Ser	Arg	Phe	Val	Ala	Ser	Lys	Leu	Gln	Asp
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Ser	Val	Gly	Leu	Gln	Lys	Val	Leu	Met	Asp	Phe	Ala	Cys	Leu	Trp	
			20				25					30			
Asn	Asn	Pro	Ile	Phe	Pro	Phe	Cys	Phe	Pro	Ala	Gly	Pro	His	Leu	Gly
		35					40					45			
Pro	Ser	Val	Val	Ser	Trp	Arg	Ala	Gly	Ser	Cys	Arg	Glu	Phe	Ala	Asp
	50					55					60				
Leu	Val	Val	Tyr	Val	Met	Arg	Ala	Leu	Gly	Ile	Pro	Cys	Gly	Thr	Asp
65					70					75					80
Tyr	Met	Pro	Met	Arg	Gly	Asp	Asn	Asn	Val	Pro	His	Phe	Trp	Asn	Phe
				85					90					95	
Thr	Leu	Asp	Lys	Asp	Gly	Lys	Thr	Tyr	Ile	Thr	Glu	Phe	Pro	Asp	Pro
			100					105					110		
Asn	Trp	Lys	Arg	Ala	Val	Ser	Met	Tyr	Asn	Pro	Lys	Ala	Lys	Val	Tyr
		115					120					125			
Arg	Asn	Thr	Tyr	Gly	Leu	Asn	Trp	Lys	Asp	Val	Lys	Arg	Gln	Gln	Gly
	130					135					140				
Lys	Met	Met	His	Pro	Ala	Phe	Arg	Lys	Pro	Leu	Tyr	Gln	Asp	Val	Thr
145					150					155					160
Ala	Val	Tyr	Ala	Asp	Ser	Leu	Asn	Arg	Asp	Leu	Val	Val	Ser	Ser	Asp
				165					170					175	
Ile	Leu	Cys	Lys	Glu	Val	His	Lys	Gly	Asp	Ile	Val	Tyr	Phe	Cys	Leu
			180					185					190		
Ser	Thr	Arg	Met	Asp	Trp	Val	Pro	Ile	Ala	Trp	Thr	Val	Phe	Glu	Glu
		195					200					205			
Asp	Ser	Leu	Arg	Phe	Gln	Asp	Thr	Glu	Gly	Ser	Val	Ile	Gly	Cys	Leu
	210					215					220				
Ala	Thr	Trp	Asn	Gly	Lys	Arg	Leu	Val	Met	Gln	Ser	Glu	Pro	Phe	Thr
225					230					235					240
Tyr	Asp	Lys	Met	Ser	Gly	Thr	Ile	Ala	Leu	Leu	Thr	Pro	Gln	Ser	Glu
				245					250					255	
Lys	Glu	Asp	Ile	Thr	Leu	Tyr	Phe	Lys	Phe	Pro	Leu	Phe	Cys	Asp	Leu
		260						265					270		
Gly	Ile	Leu	Arg	Met	Pro	Gly	Gly	Val	Phe	Glu	Gly	Ser	Asn	Asp	Ser
		275					280					285			
Gln	Phe	Arg	Ser	Ala	Asp	Thr	Leu	Tyr	Tyr	Val	Lys	Gln	Trp	Pro	Phe
	290					295					300				
Arg	Leu	Asn	Asn	Thr	Ile	Phe	Pro	Glu	Lys	Glu	Lys	Ser	Tyr	Arg	Tyr
305					310					315					320
Val	Arg	Tyr	Lys	Gly	Pro	Lys	Gly	Ser	Tyr	Cys	Asn	Ile	Ala	Glu	Met
				325					330					335	
Ala	Phe	Phe	Glu	Asp	Thr	Ser	Asp	Thr	Leu	Ala	Leu	Lys	Gly	Arg	Ile
			340					345					350		
Ile	Gly	Thr	Pro	Gly	Cys	Phe	Gln	Lys	Asp	Gly	Ser	His	Asp	Tyr	Tyr
		355					360					365			
Lys	Val	Tyr	Asp	Gly	Asn	Pro	Tyr	Thr	Tyr	Met	Asp	Tyr	Lys	Thr	Pro
	370					375					380				
Asp	Glu	Gly	Trp	Val	Gly	Leu	Asp	Phe	Gly	Ile	Pro	Arg	Arg	Ile	Lys
385					390					395					400
Lys	Phe	Thr	Tyr	Ile	Pro	Arg	Asn	Ser	Asp	Asn	Phe	Ile	His	Lys	Gly
				405					410					415	
Asp	Val	Tyr	Glu	Leu	Phe	Tyr	Trp	His	Asp	Lys	Lys	Trp	Asn	Ser	Leu
			420					425					430		
Gly	Arg	Gln	Val	Ala	Lys	Ala	Asp	Ser	Leu	Asn	Tyr	Val	Ile	Pro	Lys
		435					440					445			

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Gly Val Ala Leu Phe Leu Lys Asn His Thr Glu Gly Lys Asp Glu Arg
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 Ile Phe Lys Lys Thr Asp Gly Arg Gln Gln Phe Trp
 465 470 475

<210> 5963

<211> 239

<212> PRT

<213> B.fragilis

<400> 5963

Glu Arg Lys Ser Met Lys Thr Val Val Asp Lys Ala Ser Ser Arg Gly
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 Tyr Phe Asn His Gly Trp Leu Lys Thr His His Thr Phe Ser Phe Ala
 20 25 30
 Asn Tyr Tyr Asn Pro Ser Arg Met His Phe Gly Val Leu Arg Val Leu
 35 40 45
 Asn Asp Asp Ser Val Asp Pro Glu Met Gly Phe Asp Thr His Pro His
 50 55 60
 Gln Asn Met Glu Val Ile Ser Ile Pro Leu Lys Gly Tyr Leu Arg His
 65 70 75 80
 Gly Asp Ser Val Lys Asn Thr Arg Thr Ile Thr Pro Gly Asp Ile Gln
 85 90 95
 Val Met Ser Thr Gly Lys Gly Ile Phe His Ser Glu Tyr Asn Gly Ser
 100 105 110
 Asp Lys Glu Gln Leu Glu Phe Leu Gln Ile Trp Val Phe Pro Arg Ile
 115 120 125
 Glu Asn Thr Glu Pro Glu Tyr Asn Asn Tyr Asp Ile Arg Pro Leu Leu
 130 135 140
 Lys Arg Asn Glu Leu Ala Leu Ile Ile Ser Pro Asp Gly Lys Val Pro
 145 150 155 160
 Ala Ser Ile Lys Gln Asp Ala Trp Phe Ser Met Gly Thr Phe Asp Ala
 165 170 175
 Gly Lys Ser Phe Glu Tyr Lys Leu His Gln Glu Gly Asn Gly Val Tyr
 180 185 190
 Leu Phe Ile Ile Glu Gly Asp Val Glu Val Ala Gly Asn Arg Leu Ser
 195 200 205
 Arg Arg Asp Gly Ile Gly Leu Trp Asp Thr Lys Ser Phe Lys Val Glu
 210 215 220
 Ile Thr Gln Glu Ala Thr Leu Leu Leu Met Glu Val Pro Met Arg
 225 230 235

<210> 5964

<211> 493

<212> PRT

<213> B.fragilis

<400> 5964

Val Phe Arg Arg Lys Leu Gln Ser Thr Asp Lys Ser Gly Arg Lys Ala
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 Gly His Pro Leu His Val Ser Leu Arg Lys Lys Leu Thr Ser Ser Pro
 20 25 30
 Ile Arg Ser Ser Thr Ser Thr Glu Ser Cys Ile Phe Ala Thr Cys Lys
 35 40 45
 Leu Lys Pro Phe Phe Met Tyr Thr Asn Lys Gln Ile Trp Ser Val Ser
 50 55 60
 Tyr Pro Ile Leu Leu Ser Leu Leu Ala Gln Asn Val Ile Asn Val Thr
 65 70 75 80
 Asp Thr Ala Phe Leu Gly Arg Val Ser Glu Ile Ala Leu Gly Ala Ser

				85					90					95	
Ala	Met	Gly	Gly	Leu	Phe	Tyr	Ile	Cys	Ile	Phe	Thr	Ile	Ala	Phe	Gly
			100					105					110		
Phe	Ser	Thr	Gly	Ser	Gln	Ile	Val	Ile	Ala	Arg	Arg	Asn	Gly	Glu	Ala
		115					120					125			
Arg	Tyr	Gly	Asp	Val	Gly	Pro	Val	Met	Ile	Gln	Gly	Val	Leu	Phe	Leu
		130				135					140				
Leu	Val	Met	Ala	Leu	Leu	Leu	Phe	Gly	Phe	Thr	Lys	Ala	Phe	Gly	Gly
145					150					155					160
Asn	Ile	Met	Arg	Leu	Leu	Val	Ser	Ser	Glu	Ser	Ile	Tyr	Asp	Ala	Thr
			165						170				175		
Met	Glu	Phe	Leu	Asp	Trp	Arg	Ile	Phe	Gly	Phe	Phe	Phe	Ser	Phe	Val
			180					185					190		
Asn	Val	Met	Phe	Arg	Ala	Leu	Tyr	Ile	Gly	Ile	Thr	Arg	Thr	Lys	Val
		195				200						205			
Leu	Thr	Ile	Asn	Ala	Val	Val	Met	Ala	Leu	Thr	Asn	Val	Val	Leu	Asp
210					215						220				
Tyr	Ala	Leu	Ile	Phe	Gly	His	Phe	Gly	Leu	Pro	Glu	Met	Gly	Ile	Lys
225					230					235					240
Gly	Ala	Ala	Ile	Ala	Ser	Val	Ile	Ala	Glu	Ala	Ala	Ser	Leu	Leu	Phe
			245						250				255		
Phe	Leu	Ile	Tyr	Thr	Tyr	Ile	Thr	Val	Asn	Leu	Lys	Lys	Tyr	Gly	Leu
			260					265					270		
Asn	Arg	Leu	Arg	Ser	Phe	Asp	Pro	Val	Leu	Leu	Met	Arg	Ile	Leu	Ser
		275					280					285			
Ile	Ser	Cys	Phe	Thr	Met	Leu	Gln	Tyr	Phe	Leu	Ser	Met	Ala	Thr	Trp
		290				295					300				
Phe	Val	Phe	Phe	Val	Ala	Val	Glu	Arg	Leu	Gly	Gln	Arg	Glu	Leu	Ala
305					310					315					320
Ile	Ala	Asn	Ile	Val	Arg	Ser	Ile	Tyr	Ile	Val	Met	Leu	Ile	Pro	Val
			325						330				335		
Asn	Ala	Leu	Ala	Thr	Thr	Thr	Asn	Ser	Leu	Val	Ser	Asn	Ala	Ile	Gly
		340					345					350			
Ala	Gly	Gly	Ile	Asn	Tyr	Val	Met	Pro	Leu	Ile	Asn	Lys	Ile	Gly	Arg
		355					360				365				
Phe	Ser	Phe	Leu	Ile	Met	Leu	Gly	Leu	Val	Ile	Ile	Thr	Ala	Leu	Phe
		370				375					380				
Pro	Gln	Ala	Leu	Leu	Ser	Val	Tyr	Thr	Asn	Glu	Thr	Ala	Leu	Ile	Asn
385					390					395					400
Glu	Ser	Val	Ser	Ser	Val	Tyr	Val	Ile	Cys	Val	Ala	Met	Leu	Ile	Ala
			405						410				415		
Ser	Val	Ala	Asn	Val	Val	Phe	Asn	Gly	Ile	Ser	Gly	Thr	Gly	Asn	Thr
			420				425						430		
Gln	Ala	Ala	Leu	Met	Leu	Glu	Ala	Ile	Thr	Ile	Ala	Ile	Tyr	Gly	Ser
		435					440					445			
Tyr	Ile	Ile	Phe	Ile	Gly	Met	Trp	Val	Lys	Ala	Pro	Ile	Glu	Trp	Cys
		450				455					460				
Phe	Thr	Ile	Glu	Ile	Leu	Tyr	Tyr	Thr	Leu	Leu	Leu	Ala	Thr	Ser	Tyr
465					470					475					480
Ile	Tyr	Phe	Lys	Lys	Ala	Lys	Trp	Gln	Asn	Lys	Lys	Ile			
			485						490						

<210> 5965

<211> 422

<212> PRT

<213> B.fragilis

<400> 5965

Tyr Met Thr Gly Val Ala Glu Lys Lys Lys Arg Met Ile Lys Ile Tyr

1	5	10	15
Leu Leu Trp Val	Leu Leu Val Gly Ser	Leu Cys Cys Ser	Cys Thr Gly
20	25	30	
Asn Lys Arg Leu	Glu Tyr Ala Leu	Glu Phe Ala Gly	Glu Asn Arg Gly
35	40	45	
Glu Leu Glu Lys	Val Leu Glu His	Tyr Asn Asp Ser	Gly Leu Lys Gln
50	55	60	
Asp Ala Ala Arg	Phe Leu Ile Glu	Asn Met Pro Arg	Tyr Phe Ser Tyr
65	70	75	80
Glu Gly Trp Gln	Leu Asp Thr Leu	Lys Ala Ile His	Ala Ala Thr Glu
85	90	95	
His Thr Asp Gly	Trp Val Asn Lys	Lys Asp Arg Lys	Lys Trp Glu His
100	105	110	
Phe Ser Phe Arg	Thr Leu Lys Lys	Val Tyr Asp Ala	Lys Val Ile Lys
115	120	125	
Ala Glu Phe Leu	Ile His His Ile	Asp Gln Ala Phe	Glu Val Phe Glu
130	135	140	
Lys Arg Ser Trp	Asn Lys Tyr Leu	Pro Phe Asp Asp	Phe Cys Glu Leu
145	150	155	160
Ile Leu Pro Tyr	Arg Ile Gly Asp	Glu Pro Leu Glu	Glu Trp Arg Gly
165	170	175	
Trp Tyr Arg Glu	Arg Tyr Glu Ser	Ile Leu Asp Ser	Leu Tyr Gln Gly
180	185	190	
Thr Asp Val Val	Glu Ala Thr Asp	Arg Leu Gly Ala	Tyr Leu Arg Gln
195	200	205	
Glu Lys Asp Phe	Arg Tyr Ser Val	Glu Leu Asp Leu	Pro His Leu Gly
210	215	220	
Ala Gly Phe Leu	Leu Ala Asn Arg	Val Gly Ser Cys	Glu Ala Ser Cys
225	230	235	240
Asp Phe Thr Val	Tyr Val Leu Arg	Ala Leu Gly Ile	Pro Ala Ala Thr
245	250	255	
Asp Ile Tyr His	Tyr Gly Pro Gly	Lys Gly Ala Gly	His Val Trp Asn
260	265	270	
Val Leu Arg Asp	Thr Thr Gly Gly	Tyr Val Pro Phe	Trp Phe Ile Gln
275	280	285	
Thr Lys Val Glu	Arg Gly Gly Ser	Asp Lys Arg Glu	Lys Gly Lys Val
290	295	300	
Tyr Arg Arg Cys	Phe Gly Ala Gln	Gln Glu Lys Val	Ser Gly Ile Arg
305	310	315	320
Arg Asp Arg Ser	Val Pro Phe Pro	Leu Lys Asp Pro	Tyr Leu Lys Asp
325	330	335	
Val Thr Ser Asp	Tyr Phe Pro Ala	Asn Gln Val Thr	Ile Glu Ile Asp
340	345	350	
Pro Gln Val Asp	Lys Lys Tyr Ile	Cys Leu Gly Val	Phe Thr Leu Glu
355	360	365	
Gly Cys Met Pro	Ile Asp Ile Thr	Val Gln Lys Gly	Asn Lys Ala Thr
370	375	380	
Phe Met Asn Val	Glu Pro Gly Ile	Leu Phe Gln Pro	Leu Tyr Asp Asn
385	390	395	400
Gly Met Lys Trp	Val Ala Ala Gly	Tyr Pro Phe Gln	Cys Arg Arg Lys
405	410	415	
Gly Arg Gly Glu	Val Ser		
420			

<210> 5966

<211> 167

<212> PRT

<213> B.fragilis

<400> 5966

Asn Glu Lys Gly Met Lys Lys Ile Ile Asn Pro Trp Lys Gly Met Glu
 1 5 10 15
 Gly Tyr Asn Cys Phe Gly Cys Ala Pro Asn Asn Glu Ala Gly Val Lys
 20 25 30
 Met Glu Phe Tyr Glu Asp Asn Asp Glu Val Ile Ser Ile Trp Arg Pro
 35 40 45
 Arg Pro Glu Tyr Gln Gly Trp Ile Asp Thr Leu His Gly Gly Ile Gln
 50 55 60
 Ala Val Leu Leu Asp Glu Ile Cys Ala Trp Val Ile Leu Arg Lys Leu
 65 70 75 80
 Gln Thr Thr Gly Val Thr Ser Lys Met Glu Thr Arg Tyr Arg Lys Ser
 85 90 95
 Ile Ser Thr Asn Asp Ser His Val Val Leu Lys Ala His Ile Lys Glu
 100 105 110
 Val Lys Arg Asn Ile Val Ile Ile Glu Ala Arg Leu Tyr Asn Lys Asp
 115 120 125
 Glu Glu Leu Cys Thr Glu Ala Leu Cys Thr Tyr Phe Thr Phe Pro Lys
 130 135 140
 Glu Lys Ala Arg Glu Glu Met His Phe Leu Ser Cys Glu Val Glu Asp
 145 150 155 160
 Glu Glu Ile Leu Pro Leu Ile
 165

<210> 5967

<211> 338

<212> PRT

<213> B.fragilis

<400> 5967

Pro Ile Phe Ile Met Lys Lys Ile Ile Leu Ser Ser Val Leu Leu Leu
 1 5 10 15
 Ser Gly Phe Phe Ile Gln Ala Gln Gln Ala Pro Glu Lys Ile Ser Phe
 20 25 30
 Asn Ser Asn Gly Glu Phe Lys Ile Ala Gln Phe Thr Asp Met His Leu
 35 40 45
 Gly His Asp Gln Glu Lys Asp Arg Ile Val Gly Asp Met Ile Lys Glu
 50 55 60
 Val Leu Asp Ser Glu Lys Pro Asp Leu Val Ile Phe Thr Gly Asp Asn
 65 70 75 80
 Thr Thr Met Asp Glu Val Arg Gln Ala Trp Glu Ala Ile Ser Ala Glu
 85 90 95
 Leu Ser Ala Arg Arg Ile Pro Trp Thr Ala Val Leu Gly Asn His Asp
 100 105 110
 Asp Glu Tyr Ala Val Lys Arg Asp Glu Ile Ile Arg Ile Ile Arg Glu
 115 120 125
 Gln Pro Tyr Cys Met Met Lys Gln Val Ala Glu Gly Ile Lys Gly Glu
 130 135 140
 Gly Asn His Ile Leu Pro Ile Tyr Ser Ser Lys Asp Gly Asn Lys Thr
 145 150 155 160
 Ala Ala Leu Leu Tyr Cys Leu Asp Thr Asn Ala Tyr Ser Lys Ile Lys
 165 170 175
 Thr Val Lys Gly Tyr Asp Trp Ile Gly Arg Ser Gln Ile Asp Trp Tyr
 180 185 190
 Ser Arg Glu Ser Arg Lys Tyr Thr Glu Arg Asn Glu Gly Gln Pro Leu
 195 200 205
 Pro Ala Leu Thr Phe Leu His Ile Pro Leu Pro Glu Tyr Thr Gln Ala
 210 215 220
 Trp Glu Ser Phe Glu Thr Lys Arg Tyr Gly Asp Arg Asn Glu Lys Glu

[illegible]

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<210> 5968
<211> 1054
<212> PRT
<213> B.fragilis
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<400> 5968

[illegible]

290	295	300
Pro Trp Trp Gly Asp Val Lys Gly Thr Gln Tyr Asp Asp Lys Ser Arg		
305	310	315
Tyr Glu Arg Ile Pro Ile Asp Trp Val Ser His Asp Asn Leu Lys Asp		320
	325	330
Phe Leu Gln Thr Gly Leu Val Thr Asn Asn Asn Ile Ser Ile Ala Tyr		335
	340	345
Lys Gly Glu Lys Ala Arg Tyr Phe Val Thr Gly Gln Tyr Ala Tyr Gln		350
	355	360
Lys Gly Gln Val Pro Ser Thr Glu Met His Ser Gly Gly Ile Asn Phe		365
	370	375
Asn Ser Thr Phe Asp Leu Ala Lys Asn Leu Gln Leu Asp Ala Asn Leu		380
385	390	395
Ala Tyr Asn Lys Ile Val Ala Pro Ser Tyr Pro Arg Tyr Gly Tyr Gly		400
	405	410
Pro Lys Asn His Met Tyr Thr Ile Val Val Trp Met Gly Asp Asp Val		415
	420	425
Asn Gly Lys Glu Leu Gln Lys His Lys Tyr Val Pro Gly Gln Glu Gly		430
	435	440
Tyr Arg Gln Ala Ser Tyr Asn Tyr Ala Trp Tyr Asn Asn Pro Tyr Phe		445
450	455	460
Ala Ala Glu Glu Leu Gln Gln Ser Glu Ser Arg Asp Val Val Asn Gly		465
465	470	475
Gln Val Arg Leu Asn Tyr Gln Ile Leu Pro Asn Leu Asn Ile Gln Gly		480
	485	490
Arg Ala Ala Leu Arg Gln Lys Thr Ile Leu Gln Glu Met Lys Val Pro		495
	500	505
Lys Thr Tyr Met Asn Tyr Gly Asp Ser Arg Glu Gly Asp Tyr Lys Val		510
	515	520
Trp Asn Asp Arg Gln Thr Asn Val Asp Ala Asp Val Leu Ala Thr Tyr		525
530	535	540
Thr Gln Asp Leu Thr Pro Asp Ile Leu Phe Thr Leu Asn Ala Gly Thr		545
545	550	555
Ser Val Phe Tyr Arg Asn Tyr Arg Gln Glu Tyr Gln Ser Thr Asp Gly		560
	565	570
Leu Ile Val Pro Phe Val Tyr Ser Ile Lys Asn Thr Gln Gly Pro Ser		575
	580	585
Ile Thr Asp Ala Asn Arg Asn Glu Lys Ser Ile Arg Ser Ile Tyr Gly		590
	595	600
Ser Ile Asn Leu Asp Leu Tyr Lys Tyr Ala Tyr Leu Thr Leu Thr Gly		605
610	615	620
Arg Asn Asp Trp Ser Ser Thr Leu Ala Lys Gly Ser Asn Ser Tyr Phe		625
625	630	635
Tyr Pro Ser Val Ala Leu Ser Thr Met Val Ser Glu Tyr Ile Lys Leu		640
	645	650
Pro Thr Phe Met Asp Tyr Leu Lys Met Tyr Gly Ser Trp Ala Val Val		655
	660	665
Ser Thr Asp Leu Ser Pro Tyr Gln Ile Met Ser Thr Tyr Thr Lys Asp		670
	675	680
Ser Asn Tyr Gly Ser Asn Pro Ser Ile Ser Tyr Pro Ser Ser Leu Val		685
690	695	700
Asn Tyr Tyr Ile Lys Pro Gln Lys Thr Thr Ser Trp Glu Ala Gly Leu		705
705	710	715
Ser Thr Ala Phe Phe Arg Asn Arg Leu Ser Phe Asp Leu Thr Tyr Tyr		720
	725	730
His Thr Ile Asp Glu Asn Gln Ile Ile Asp Leu Asn Ile Ser Asn Ala		735
	740	745
Ser Gly Phe Thr Ser Arg Lys Val Asn Gly Asn Gln Tyr Thr Thr Asn		750
755	760	765

Gly Trp Glu Ile Met Ala Asn Val Gln Ala Ile Lys Asn Lys Asp Phe
 770 775 780
 Gln Trp Asp Phe Ser Leu Asn Trp Ser Lys Ser Val Lys Lys Leu Thr
 785 790 795 800
 Glu Ile Tyr Gly Gly Gln Lys Lys Phe Gly Asp Leu Lys Val Gly Asp
 805 810 815
 Arg Ala Asp Ala Phe Tyr Gly Ser Gln Trp Gln Lys Ser Ala Asp Gly
 820 825 830
 Glu Leu Ile Leu Asp Glu Asn Gly Met Pro Thr Lys Asp Ala Tyr Lys
 835 840 845
 Gln Tyr Leu Gly His Leu Asp Pro Asn Phe Arg Met Gly Met Gln Asn
 850 855 860
 Thr Phe Arg Tyr Lys Asp Phe Thr Leu Ser Val Asp Leu Asp Gly Ala
 865 870 875 880
 Tyr Lys Gly Val Ile Tyr Ser Val Leu Ser Glu Lys Leu Trp Trp Gly
 885 890 895
 Gly Lys His Pro Glu Ser Val Glu Tyr Arg Asp Ala Gln Tyr Ala Val
 900 905 910
 Gly His Pro Ile Tyr Val Pro Asn Gly Val Val Val Thr Gly Gly Glu
 915 920 925
 Leu Lys Arg Asp Ile Asp Gly Asn Val Ile Ser Asp Thr Arg Thr Tyr
 930 935 940
 Lys Arg Asn Thr Thr Ala Val Asp Trp Gln Gln Trp Cys Gln Asn Tyr
 945 950 955 960
 Pro Tyr Gln Ala Tyr Val Ser Ser Lys Glu Asn Ala Lys Phe Ala Asn
 965 970 975
 Val Phe Asp Arg Ser Tyr Ile Lys Leu Arg Arg Val Ala Leu Thr Tyr
 980 985 990
 Asn Phe Thr Lys Leu Leu Ser Lys Gln Ser Pro Val Lys Gly Leu Thr
 995 1000 1005
 Ala Thr Val Phe Gly Asn Asn Leu Ala Val Trp Lys Lys Val Pro Phe
 1010 1015 1020
 Val Asp Pro Asp Tyr Thr Gly Asp Ser Asn Asp Gly Gly Ala Asn Asp
 1025 1030 1035 1040
 Pro Thr Ala Arg Tyr Ile Gly Met Gly Val Asn Ile Lys Phe
 1045 1050

<210> 5969

<211> 416

<212> PRT

<213> B.fragilis

<400> 5969

Pro Tyr Ile Ile Glu Met Ser Thr Tyr Ala Pro Phe Ala Lys Pro Leu
 1 5 10 15
 Tyr Val Met Leu Lys Pro Val Gly Ala Val Cys Asn Leu Ala Cys Asp
 20 25 30
 Tyr Cys Tyr Tyr Leu Glu Lys Ser Arg Leu Tyr Gln Glu Asn Pro Lys
 35 40 45
 His Val Met Ser Asp Glu Leu Glu Lys Phe Ile Glu Gln Tyr Ile
 50 55 60
 Asn Ser Gln Thr Met Pro Gln Val Leu Phe Thr Trp His Gly Gly Glu
 65 70 75 80
 Thr Leu Met Arg Pro Leu Ser Phe Tyr Lys Lys Ala Met Glu Leu Gln
 85 90 95
 Lys Lys Tyr Ala Arg Gly Arg Ser Ile Asp Asn Cys Ile Gln Thr Asn
 100 105 110
 Gly Thr Leu Leu Thr Asp Glu Trp Cys Glu Phe Phe Arg Glu Asn Asn
 115 120 125

Trp Leu Val Gly Val Ser Ile Asp Gly Pro Gln Glu Phe His Asp Glu
 130 135 140
 Tyr Arg Lys Asn Lys Leu Gly Lys Pro Ser Phe Val Lys Val Thr Asn
 145 150 155 160
 Gly Ile Asn Leu Leu Lys Lys His Gly Val Glu Trp Asn Ala Met Ala
 165 170 175
 Val Val Asn Asp Phe Asn Ala Asp Tyr Pro Leu Asp Phe Tyr His Phe
 180 185 190
 Phe Lys Glu Leu Gly Cys His Tyr Ile Gln Phe Ala Pro Ile Val Glu
 195 200 205
 Arg Ile Phe Pro His Gln Asp Gly Arg His Leu Ala Ser Leu Ala Gln
 210 215 220
 Arg Glu Gly Gly Glu Leu Ala Glu Phe Ser Val Thr Pro Glu Gln Trp
 225 230 235 240
 Gly Asn Phe Leu Cys Thr Leu Phe Asp Glu Trp Val Lys Glu Asp Val
 245 250 255
 Gly Asp Tyr Tyr Ile Gln Leu Phe Asp Ser Thr Leu Ala Asn Trp Val
 260 265 270
 Gly Glu Gln Pro Gly Val Cys Ser Met Ala Lys Thr Cys Gly His Ala
 275 280 285
 Gly Val Met Glu Phe Asn Gly Asp Val Tyr Ser Cys Asp His Phe Val
 290 295 300
 Phe Pro Glu Phe Lys Leu Gly Asn Ile Tyr Asn Gln Thr Leu Val Glu
 305 310 315 320
 Met Met Tyr Ser Glu Arg Gln Thr Ala Phe Gly Gln Met Lys Gln Lys
 325 330 335
 Ser Leu Pro Thr Gln Cys Lys Glu Cys Glu Phe Leu Phe Ala Cys Asn
 340 345 350
 Gly Glu Cys Pro Lys Asn Arg Phe Cys Arg Thr Ala Asn Gly Glu Pro
 355 360 365
 Gly Leu Asn Tyr Leu Cys Lys Gly Tyr His Gln Phe Phe Lys His Val
 370 375 380
 Ala Pro Tyr Met Asp Phe Met Lys Asn Glu Leu Met Asn Gln Arg Pro
 385 390 395 400
 Pro Ala Asn Val Met Asp Ala Ile Lys Glu Asn Lys Leu Ile Ile Asp
 405 410 415

<210> 5970

<211> 204

<212> PRT

<213> B.fragilis

<400> 5970

Lys Glu Ile Met Val Ile Lys Lys Ala Val Tyr Val Trp Val Ile Gly
 1 5 10 15
 Ile Leu Gly Met Ile Ser Phe Ala Ala Cys Ser Ser Ala Ser Gln Gly
 20 25 30
 Glu Val Pro Ser Thr Ser Asn Ala Ala Leu Asp Asn Ile Phe Ala Arg
 35 40 45
 Lys Ser Val Arg Ala Tyr Leu Asp Lys Glu Val Glu Lys Glu Lys Ile
 50 55 60
 Asp Trp Met Leu Arg Ala Gly Met Ala Ala Pro Ser Gly Lys Asp Ile
 65 70 75 80
 Arg Pro Trp Glu Phe Val Leu Val Thr Asp Arg Val Ala Leu Asp Ser
 85 90 95
 Met Ala Ala Ala Leu Pro Tyr Ala Lys Met Leu Thr Gln Ala Arg Tyr
 100 105 110
 Ala Ile Val Val Cys Gly Asp Val Ala Gln Ser Ser Tyr Trp Tyr Leu
 115 120 125

Asp Cys Ser Ala Ala Ala Gln Asn Ile Leu Leu Ala Ala Glu Ala Gln
 130 135 140
 Gly Leu Gly Ala Val Trp Thr Ala Ala Tyr Pro Tyr Glu Asp Arg Ile
 145 150 155 160
 Arg Val Val Arg Lys Tyr Thr Glu Leu Pro Gly Asn Ile Val Pro Leu
 165 170 175
 Cys Val Ile Pro Phe Gly Tyr Pro Ala Thr Ala Gln Glu Pro Lys Gln
 180 185 190
 Lys Phe Asp Glu Lys Lys Ile His Tyr Asp Lys Phe
 195 200

<210> 5971

<211> 282

<212> PRT

<213> B.fragilis

<400> 5971

Lys Val Thr Ile Met Thr Ala Asn Glu Val His Leu Ile Tyr Phe Ser
 1 5 10 15
 Pro Thr His Thr Ser Lys Gln Val Gly Glu Ala Ile Val Arg Gly Thr
 20 25 30
 Gly Ile Thr Asn Val Ile Asn Thr Asn Leu Thr Gln Gln Ala Thr Gln
 35 40 45
 Asp Leu Val Ile Ala Glu Ser Ala Leu Ala Ile Ile Val Val Pro Val
 50 55 60
 Tyr Gly Gly Arg Val Ala Pro Leu Ala Met Asp Arg Leu Ala Ser Val
 65 70 75 80
 Arg Gly Ser Asn Thr Pro Ala Val Ile Val Val Val Tyr Gly Asn Arg
 85 90 95
 Ala Tyr Glu Lys Ser Leu Met Glu Leu Asp Tyr Trp Ala Ile Gln Gln
 100 105 110
 Gly Phe Lys Val Ile Ala Gly Ala Thr Phe Ile Gly Glu His Ser Tyr
 115 120 125
 Ser Thr Glu Lys Tyr Pro Val Ala Ala Gly Arg Pro Asp Glu Arg Asp
 130 135 140
 Leu Ala Val Ala Ala Asp Phe Gly Lys Gln Ile Ser Asp Lys Ile Ala
 145 150 155 160
 Ser Ala Thr Glu Pro Glu Lys Leu Tyr Ala Val Asp Val Arg Lys Ile
 165 170 175
 Arg Arg Pro Arg Gln Pro Phe Phe Pro Leu Phe Arg Phe Leu Arg Lys
 180 185 190
 Val Ile Ala Leu Arg Lys Ser Gly Val Pro Leu Pro Arg Thr Pro Trp
 195 200 205
 Val Glu Asp Glu Ser Leu Cys Thr His Cys Gly Thr Cys Ala Lys Met
 210 215 220
 Cys Pro Val Ser Ala Ile Ala Lys Gly Asp Glu Leu Asn Thr Asp Ala
 225 230 235 240
 Glu Arg Cys Ile Lys Cys Cys Ala Cys Val Lys Gly Cys Pro Gln Lys
 245 250 255
 Ala Arg Val Tyr Asp Thr Pro Phe Ala Val Leu Leu Ser Gln Cys Phe
 260 265 270
 Val Lys Gln Lys Asp Pro Cys Thr Leu Val
 275 280

<210> 5972

<211> 301

<212> PRT

<213> B.fragilis

<400> 5972

Asn Val Tyr Ile Tyr Met Lys Lys Glu Val Trp Ile Lys Leu Val Lys
 1 5 10 15
 Arg Ile Gly Asn Trp Ile Val Asn Ile Cys Phe Tyr Ser Cys Val Ala
 20 25 30
 Phe Val Ala Trp Met Val Leu Gln Val Phe Cys Leu Thr Ser Phe Lys
 35 40 45
 Ile Pro Ser Asn Ser Met Glu Pro Ala Leu Leu Ser Gly Asp Lys Ile
 50 55 60
 Leu Val Asp Lys Trp Thr Gly Gly Ala Arg Leu Phe Asn Ile Phe Ala
 65 70 75 80
 Ser Leu Arg Gly Glu Glu Val Asp Ile Tyr Arg Leu Pro Gly Phe Gly
 85 90 95
 Ser Phe Gln Arg Asp Asp Val Leu Val Phe Asn Phe Pro Tyr Gln Asp
 100 105 110
 Gly Ser Asp Ser Ile Gly Phe Asp Ile Met Lys Tyr Tyr Val Lys Arg
 115 120 125
 Cys Ile Ala Leu Pro Gly Asp Thr Leu Glu Ile Arg Lys Gly Tyr Tyr
 130 135 140
 His Ile Lys Gly Ile Thr Asp Ser Val Gly Asn Val Gln Ala Gln His
 145 150 155 160
 Arg Ile Ala Arg Val Arg Arg Glu Asp Ser His Gly Ile Val Met Asp
 165 170 175
 Ala Phe Pro Trp Asp Gly Arg Leu Gly Trp Thr Ile Gln Glu Phe Gly
 180 185 190
 Pro Leu Pro Val Pro Ala Lys Gly Gln Val Val Lys Ile Asp Thr Leu
 195 200 205
 Ser Cys Leu Leu Tyr Gly Arg Leu Ile His Trp Glu Gln Lys Lys Arg
 210 215 220
 Leu Arg Gln Lys Gly Glu Ala Val Cys Leu Gly Asp Ser Ala Ile Thr
 225 230 235 240
 Glu Tyr Lys Phe Thr Glu Asn Tyr Tyr Phe Val Ser Gly Asp Asn Met
 245 250 255
 Glu Asn Ser Lys Asp Ser Arg Tyr Trp Gly Met Leu Pro Glu Ser Tyr
 260 265 270
 Ile Val Gly Arg Ala Phe Thr Ile Trp Arg Ser Asp Asp Pro Leu Arg
 275 280 285
 Gly Lys Ile Arg Trp Asn Arg Val Phe Lys Arg Ile Lys
 290 295 300

<210> 5973

<211> 426

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (175), (416), (423), (424)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 5973

Phe Lys Asp Met Phe Asp Asn Leu Ser Glu Arg Leu Glu Arg Ser Phe
 1 5 10 15
 Lys Ile Leu Lys Gly Glu Gly Lys Ile Thr Glu Ile Asn Val Ala Glu
 20 25 30
 Thr Leu Lys Asp Val Arg Lys Ala Leu Leu Asp Ala Asp Val Asn Tyr
 35 40 45
 Lys Val Ala Lys Gly Phe Thr Asp Thr Val Lys Glu Lys Ala Leu Gly
 50 55 60

Gln Asn Val Leu Thr Ala Val Lys Pro Ser Gln Leu Met Val Lys Ile
 65 70 75 80
 Val His Asp Glu Leu Thr Gln Leu Met Gly Gly Glu Thr Val Glu Ile
 85 90 95
 Asp Thr Lys Gly Gln Pro Ala Val Ile Leu Met Ser Gly Leu Gln Gly
 100 105 110
 Ser Gly Lys Thr Thr Phe Ser Gly Lys Leu Ala Arg Met Leu Lys Thr
 115 120 125
 Lys Lys Asn Lys Arg Pro Leu Leu Val Ala Cys Asp Val Tyr Arg Pro
 130 135 140
 Ala Ala Ile Glu Gln Leu Arg Val Leu Ala Glu Gln Ile Asp Val Pro
 145 150 155 160
 Met Tyr Ser Glu Ile Asp Ser Lys Asp Pro Val Ser Ile Ala Xaa Asn
 165 170 175
 Ala Ile Lys Glu Ala Arg Ala Lys Gly Tyr Asp Leu Val Ile Val Asp
 180 185 190
 Thr Ala Gly Arg Leu Ala Val Asp Glu Gln Met Met Asn Glu Ile Ala
 195 200 205
 Ala Ile Lys Glu Ala Ile Gln Pro Asn Glu Ile Leu Phe Val Val Asp
 210 215 220
 Ser Met Thr Gly Gln Asp Ala Val Asn Thr Ala Lys Glu Phe Asn Glu
 225 230 235 240
 Arg Leu Asp Phe Asp Gly Val Val Leu Thr Lys Leu Asp Gly Asp Thr
 245 250 255
 Arg Gly Gly Ala Ala Leu Ser Ile Arg Ser Val Val Asn Lys Pro Ile
 260 265 270
 Lys Phe Val Gly Thr Gly Glu Lys Leu Asp Ala Ile Asp Gln Phe His
 275 280 285
 Pro Ala Arg Met Ala Asp Arg Ile Leu Gly Met Gly Asp Ile Val Ser
 290 295 300
 Leu Val Glu Arg Ala Gln Glu Gln Tyr Asp Glu Glu Glu Ala Lys Arg
 305 310 315 320
 Leu Gln Lys Lys Ile Ala Lys Asn Gln Phe Asp Phe Asn Asp Phe Leu
 325 330 335
 Ser Gln Met Ser Gln Ile Lys Lys Met Gly Asn Leu Lys Glu Leu Ala
 340 345 350
 Ser Met Ile Pro Gly Val Gly Lys Ala Ile Lys Asp Ile Asp Ile Asp
 355 360 365
 Asp Asn Ala Phe Lys Ser Ile Glu Ala Ile Ile Tyr Ser Met Thr Pro
 370 375 380
 Glu Glu Arg Ser Asn Pro Gly Ile Leu Asn Gly Ser Arg Arg Thr Arg
 385 390 395 400
 Ile Ala Lys Gly Ser Gly Thr Thr Ser Leu His Arg Gly Phe Gln Xaa
 405 410 415
 Arg Ser Ile Gly Ile Ser Xaa Xaa Asp His
 420 425

<210> 5974

<211> 216

<212> PRT

<213> B.fragilis

<400> 5974

Lys Arg Tyr Ile Ile Met Lys Lys Leu Gln Phe Leu Val Cys Phe Leu
 1 5 10 15
 Leu Leu Ser Val Ala Ser Tyr Ala Ala Glu Arg Thr Ile Gln Leu Pro
 20 25 30
 Lys Pro Asp Met Asn Arg Ala Gly Leu Leu Met Lys Ala Leu Ser Glu
 35 40 45

Arg His Ser Thr Arg Glu Tyr Ala Ser Lys Ala Leu Ser Asn Thr Asp
 50 55 60
 Leu Ser Asp Leu Leu Trp Ala Ala Asn Gly Ile Asn Arg Ser Ser Glu
 65 70 75 80
 Gly Lys Arg Thr Ala Pro Ser Ala Met Asn Arg Gln Asp Ile Asp Ile
 85 90 95
 Tyr Val Val Leu Pro Gln Gly Thr Tyr Leu Tyr Asp Ala Lys Gly His
 100 105 110
 Lys Leu Asn Leu Ile Ser Glu Gly Asp His Arg Ser Ala Val Ala Gly
 115 120 125
 Gly Gln Ala Phe Val Asn Asn Ala Pro Val Ser Leu Val Leu Val Ser
 130 135 140
 Asp Leu Ser Lys Leu Gly Asp Ala Lys Ser Asn His Val Gln Leu Met
 145 150 155 160
 Gly Ala Met Asp Ala Gly Ile Val Ser Gln Asn Ile Ser Leu Phe Cys
 165 170 175
 Ser Ala Ala Arg Leu Ala Thr Val Pro Arg Ala Ser Met Asp Leu Val
 180 185 190
 Arg Leu Lys Ala Ala Leu Lys Leu Lys Asp Thr Gln Met Pro Met Met
 195 200 205
 Asn His Pro Val Gly Tyr Phe Lys
 210 215

<210> 5975

<211> 199

<212> PRT

<213> B.fragilis

<400> 5975

Arg Asn Leu Ile Arg Thr Tyr Tyr Cys His Lys Lys Arg His Thr Lys
 1 5 10 15
 Ala Ile Leu Tyr Ala Arg Phe Leu Phe Asn Gln Lys Asn Ile Arg Ile
 20 25 30
 Leu Phe Ala Lys Ile Lys Arg Thr Leu Tyr Leu Cys Ile Arg Phe Lys
 35 40 45
 Met Val Met Asn Thr Phe Leu Glu Arg Arg Lys Lys Met Glu Ser Tyr
 50 55 60
 Asn Arg Leu Leu Glu His Asn Ile Lys Pro Ser Met Gln Arg Ile Ala
 65 70 75 80
 Ile Met Asn Tyr Leu Met Glu His Lys Thr His Pro Ser Ala Asp Glu
 85 90 95
 Ile Tyr Thr Glu Leu Ser Ser Ser Met Pro Thr Leu Ser Lys Thr Thr
 100 105 110
 Val Tyr Asn Thr Leu Arg Leu Phe Ser Glu Gln Gly Ala Ala Gln Met
 115 120 125
 Leu Thr Ile Asp Glu Arg Asn Thr Asn Phe Asp Ala Asp Thr Ser Gln
 130 135 140
 His Ala His Phe Leu Cys Lys Arg Cys Gly Arg Ile Tyr Asp Leu Lys
 145 150 155 160
 Cys Gln Val Glu Met Lys Gln Val Glu Gly Leu Gln Met Asp Gly His
 165 170 175
 Glu Val Ser Glu Val His Tyr Tyr Tyr Lys Gly Val Cys Lys Lys Cys
 180 185 190
 Leu Asn Asn Ile Arg Ile Asp
 195

<210> 5976

<211> 340

<212> PRT

<213> B.fragilis

<400> 5976

Thr Lys Leu Met Lys Gln Ile Asn Ala Val Ile Thr Gly Val Gly Gly
 1 5 10 15
 Tyr Val Pro Asp Tyr Ile Leu Thr Asn Asp Glu Ile Ser Arg Ile Val
 20 25 30
 Asp Thr Thr Asp Glu Trp Ile Met Gly Arg Ile Gly Ile Lys Glu Arg
 35 40 45
 Arg Ile Leu Asn Glu Glu Gly Leu Gly Thr Ser Tyr Met Ala Arg Lys
 50 55 60
 Ala Val Lys Gln Leu Met Gln Arg Thr Gln Ser Asn Pro Asp Asp Ile
 65 70 75 80
 Asp Leu Val Ile Val Ala Thr Thr Thr Pro Asp Tyr Arg Leu Pro Ser
 85 90 95
 Thr Ala Ser Ile Leu Cys Glu Arg Val Gly Leu Lys Asn Ala Phe Ala
 100 105 110
 Phe Asp Met Gln Ala Val Cys Ser Gly Phe Leu Tyr Ala Leu Glu Thr
 115 120 125
 Gly Ala Asn Phe Ile Arg Ser Gly Lys Tyr Lys Lys Val Ile Ile Val
 130 135 140
 Gly Ala Asp Lys Met Ser Ser Val Ile Asp Tyr Thr Asp Arg Ala Thr
 145 150 155 160
 Cys Pro Ile Phe Ala Asp Gly Ala Ala Ala Phe Leu Leu Glu Pro Thr
 165 170 175
 Thr Asp His Leu Gly Val Ile Asp Ser Val Leu Arg Thr Asp Gly Lys
 180 185 190
 Gly Leu Pro Phe Leu His Met Lys Ala Gly Gly Ser Val Cys Ser Pro
 195 200 205
 Ser Tyr Phe Thr Val Asp Asn His Met His Tyr Leu His Gln Glu Gly
 210 215 220
 Arg Thr Val Phe Lys Tyr Ala Val Ala Asn Met Ser Asp Ala Cys Glu
 225 230 235 240
 Ser Ile Ile Glu Arg Asn Gln Leu Thr Lys Asp Glu Ile Asp Trp Val
 245 250 255
 Val Pro His Gln Ala Asn Gln Arg Ile Ile Ser Ala Val Ala Gln Arg
 260 265 270
 Leu Asp Val Pro Leu Glu Lys Val Met Ile Asn Ile Glu His Tyr Gly
 275 280 285
 Asn Thr Ser Ala Gly Thr Leu Pro Leu Cys Ile Trp Asp Phe Glu Asn
 290 295 300
 Lys Leu Lys Lys Gly Asp Asn Leu Ile Phe Thr Ala Phe Gly Ala Gly
 305 310 315 320
 Phe Ala Trp Gly Ala Val Tyr Val Lys Trp Gly Tyr Asp Gly Lys Thr
 325 330 335
 Asn Asn Ala Cys
 340

<210> 5977

<211> 287

<212> PRT

<213> B.fragilis

<400> 5977

Asp Ile Val Ile Met Leu Arg Ile Ala Val Gln Ala Lys Gly Arg Leu
 1 5 10 15
 Phe Glu Glu Thr Met Ala Leu Leu Glu Glu Ser Asp Ile Lys Leu Ser
 20 25 30
 Thr Thr Lys Arg Thr Leu Leu Val Gln Ser Ser Asn Phe Pro Val Glu

35 40 45
 Val Leu Phe Leu Arg Asp Asp Asp Ile Pro Gln Ser Val Ala Thr Gly
 50 55 60
 Val Ala Asp Leu Gly Ile Val Gly Glu Asn Glu Phe Val Glu Arg Gln
 65 70 75 80
 Glu Asp Ala Glu Ile Ile Lys Arg Leu Gly Phe Ser Lys Cys Arg Leu
 85 90 95
 Ser Leu Ala Met Pro Lys Asp Ile Glu Tyr Pro Gly Leu Ser Trp Phe
 100 105 110
 Asn Gly Lys Lys Ile Ala Thr Ser Tyr Pro Gly Ile Leu Asp Ala Phe
 115 120 125
 Met Lys Ser Asn Gly Val Lys Ala Glu Val His Val Ile Thr Gly Ser
 130 135 140
 Val Glu Val Ala Pro Gly Ile Gly Leu Ala Asp Ala Ile Phe Asp Ile
 145 150 155 160
 Val Ser Ser Gly Ser Thr Leu Val Ser Asn Arg Leu Lys Glu Val Glu
 165 170 175
 Val Val Met Arg Ser Glu Ala Leu Leu Ile Gly Asn Lys Asn Met Ser
 180 185 190
 Lys Glu Lys Lys Glu Ile Leu Asp Glu Leu Leu Phe Arg Met Asp Ala
 195 200 205
 Val Lys Thr Ala Glu Asp Lys Lys Tyr Val Leu Met Asn Ala Pro Lys
 210 215 220
 Asp Lys Leu Glu Asp Ile Ile Ala Val Leu Pro Gly Met Lys Ser Pro
 225 230 235 240
 Thr Val Met Pro Leu Ala Gln Asp Gly Trp Cys Ser Val His Thr Val
 245 250 255
 Leu Asp Glu Lys Arg Phe Trp Glu Ile Ile Gly Lys Leu Lys Ala Leu
 260 265 270
 Gly Ala Glu Gly Ile Leu Val Leu Pro Ile Glu Lys Met Ile Ile
 275 280 285

<210> 5978

<211> 153

<212> PRT

<213> B.fragilis

<400> 5978

Glu Asn Lys Met Lys Leu Ala Pro Ile Asn Ile Lys Asn Lys Arg Ala
 1 5 10 15
 Thr Phe Asp Tyr Glu Leu Ile Asp Thr Tyr Thr Ala Gly Ile Val Leu
 20 25 30
 Thr Gly Thr Glu Ile Lys Ser Ile Arg Leu Gly Lys Ala Ser Leu Val
 35 40 45
 Asp Thr Phe Cys Tyr Phe Ala Lys Gly Glu Leu Trp Val Lys Asn Met
 50 55 60
 His Ile Ala Glu Tyr Phe Tyr Gly Ser Tyr Asn Asn His Ala Ala Arg
 65 70 75 80
 Arg Asp Arg Lys Leu Leu Ser Lys Lys Glu Leu Asn Lys Leu Glu
 85 90 95
 Arg Gly Thr Lys Asp Ala Gly Phe Thr Ile Val Pro Val Arg Leu Phe
 100 105 110
 Ile Asn Glu Arg Gly Leu Ala Lys Val Val Val Ala Leu Ala Lys Gly
 115 120 125
 Lys Lys Gln Tyr Asp Lys Arg Glu Ala Leu Lys Glu Lys Asp Asp Arg
 130 135 140
 Arg Asp Met Asp Arg Met Phe Lys Arg
 145 150

<210> 5979
 <211> 158
 <212> PRT
 <213> B.fragilis

<400> 5979

Lys Gln Arg Met Lys Lys Val Leu Ser Leu Val Ala Leu Ala Met Ile
 1 5 10 15
 Ser Thr Ile Met Phe Ala Val Asn Asp Gly Val Lys Ala Asp Gln Asn
 20 25 30
 Lys Lys Glu Ala Lys Ser Gly Glu Val Ile Val Met Asn Lys Glu Met
 35 40 45
 Phe Ile Asn Asp Val Phe Asp Tyr Gln Asn Ser Lys Glu Trp Lys Tyr
 50 55 60
 Lys Gly Asp Lys Pro Ala Ile Ile Asp Leu Tyr Ala Asp Trp Cys Gly
 65 70 75 80
 Pro Cys Arg Met Thr Ala Pro Ile Met Lys Ser Leu Ala Lys Glu Tyr
 85 90 95
 Asp Gly Lys Ile Val Ile Tyr Lys Val Asn Val Asp Lys Glu Lys Glu
 100 105 110
 Leu Ala Ala Leu Phe Asn Ala Thr Ser Ile Pro Leu Phe Val Phe Ile
 115 120 125
 Pro Met Glu Gly Glu Pro Gln Leu Phe Arg Gly Ala Ala Asp Lys Ala
 130 135 140
 Thr Tyr Lys Lys Ala Ile Asp Glu Phe Leu Leu Lys Gln Lys
 145 150 155

<210> 5980
 <211> 192
 <212> PRT
 <213> B.fragilis

<400> 5980

Phe Thr Pro Ile Met Lys Trp Met Ile Leu Ile Phe Leu Asn Phe Leu
 1 5 10 15
 Phe Cys Ala Gln Leu Val Gly Gln Val Ser Arg Pro Asp Arg Asn Leu
 20 25 30
 Leu Arg Gly Glu Thr Tyr Val Ile Glu Val Pro Lys Gly Trp Lys Arg
 35 40 45
 Pro Ser Ala Val His Ser Cys Asn Asp Glu Pro Leu Lys Arg Val Asn
 50 55 60
 Gly Lys Tyr Glu Thr Thr Lys Phe Met Arg Val Tyr Ser Lys Arg Lys
 65 70 75 80
 Asp Arg Cys Gly Ala Val Leu Thr Ile Met Glu Ile Gln Lys Cys Ala
 85 90 95
 Ser Phe Gln Glu Ile Phe Lys Glu Asp Ser Ile Trp Ala Ser Thr Asp
 100 105 110
 Thr Thr Gln Val Lys Val Ile Tyr Lys Ser Val Asn Ser Lys Asn Gly
 115 120 125
 Val Lys Lys Met Ala Phe Thr Ser Tyr Lys Ala Glu Arg His Pro Glu
 130 135 140
 Thr Asn Glu Leu Ser Ala Leu Gln Lys Ala Glu Trp Tyr Leu Gln Gly
 145 150 155 160
 Arg Glu Asn Val Tyr Ile Ser Phe Thr Ser Cys Ser Leu Phe Leu
 165 170 175
 Glu Leu Leu Pro Gln Ile Lys Asp Ile Val Ala Ser Leu Lys Glu Leu
 180 185 190

<210> 5981

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<211> 485
<212> PRT
<213> B.fragilis
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<400> 5981

Met	His	Trp	Ile	Met	Glu	Asn	Gly	Val	Met	Gln	Tyr	Phe	Glu	Trp
1				5					10				15	
Asn	Leu	Pro	Asn	Asp	Gly	Asn	Leu	Trp	Lys	Gln	Leu	Lys	Glu	Ala
			20					25					30	
Ser	His	Leu	His	Glu	Ile	Gly	Val	Thr	Ala	Val	Trp	Ile	Pro	Pro
		35					40					45		Ala
Tyr	Lys	Ala	Asp	Glu	Gln	Gln	Asp	Glu	Gly	Tyr	Ala	Thr	Tyr	Asp
	50					55					60			Leu
Tyr	Asp	Leu	Gly	Glu	Phe	Asp	Gln	Lys	Gly	Thr	Val	Arg	Thr	Lys
65					70					75				80
Gly	Thr	Lys	Glu	Glu	Leu	Lys	Glu	Met	Ile	Asp	Glu	Leu	His	Lys
				85					90					95
His	Ile	Ser	Val	Tyr	Leu	Asp	Val	Val	Leu	Asn	His	Lys	Ala	Gly
			100					105					110	
Asp	Phe	Thr	Glu	Lys	Phe	Ile	Val	Val	Glu	Val	Asp	Pro	Asn	Asp
		115					120					125		Arg
Thr	Gln	Ala	Leu	Gly	Lys	Pro	Phe	Glu	Ile	Gln	Gly	Trp	Thr	Gly
	130					135					140			Tyr
Ser	Phe	His	Gly	Arg	Lys	Asp	Lys	Tyr	Ser	Asp	Phe	Lys	Trp	His
145					150					155				160
Tyr	His	Phe	Ser	Gly	Thr	Gly	Phe	Asp	Asp	Ala	Lys	Lys	Arg	Ser
				165					170					175
Ile	Phe	Gln	Ile	Gln	Gly	Glu	Gly	Lys	Ala	Trp	Ser	Glu	Gly	Val
			180					185					190	Asp
Asn	Glu	Asn	Gly	Asn	Tyr	Asp	Phe	Leu	Leu	Cys	Asn	Asp	Ile	Asp
		195					200					205		Leu
Asp	His	Pro	Glu	Val	Val	Thr	Glu	Leu	Asn	Arg	Trp	Gly	Lys	Trp
	210					215					220			Val
Ser	Lys	Glu	Leu	Asn	Leu	Asp	Gly	Met	Arg	Leu	Asp	Ala	Ile	Lys
225					230					235				240
Met	Lys	Asp	Lys	Phe	Ile	Ala	Gln	Phe	Leu	Asp	Ala	Val	Arg	Ser
				245					250					255
Arg	Gly	Asp	Lys	Phe	Tyr	Ala	Val	Gly	Glu	Tyr	Trp	Asn	Gly	Asp
			260					265					270	Leu
Asn	Thr	Leu	Asp	Ala	Tyr	Ile	Lys	Ser	Val	Gly	His	Lys	Val	Asn
		275					280					285		Leu
Phe	Asp	Val	Pro	Leu	His	Tyr	Asn	Leu	Phe	Gln	Ala	Ser	Gln	Glu
	290					295				300				Gly
Lys	Asn	Tyr	Asp	Leu	Gln	Asn	Ile	Leu	Lys	Asn	Thr	Leu	Val	Glu
305					310					315				320
Tyr	Cys	Asp	Leu	Ala	Val	Thr	Phe	Val	Asp	Asn	His	Asp	Ser	Gln
				325					330					335
Gly	Ser	Ser	Leu	Glu	Ser	Gln	Ile	Glu	Asp	Trp	Phe	Lys	Pro	Leu
			340					345					350	Ala
Tyr	Gly	Leu	Ile	Leu	Leu	Met	Lys	Asp	Gly	Tyr	Pro	Cys	Leu	Phe
		355					360					365		Tyr
Gly	Asp	Tyr	Tyr	Gly	Val	Lys								

[illegible]

Glu Ala Gly Ser Lys Lys Met Asp Leu Gly Glu Glu His Lys Gly Glu
 435 440 445
 Ile Trp His Glu Ile Thr Gly Asn Ile Gln Gln Glu Ile Thr Leu Asp
 450 455 460
 Glu Lys Gly Ser Gly Glu Phe Ser Val Asn Thr Arg Asn Ile Ala Val
 465 470 475 480
 Trp Ile Lys Lys Asn
 485

<210> 5982
 <211> 158
 <212> PRT
 <213> B.fragilis

<400> 5982
 Met His Asn Phe Cys Phe Phe Arg Tyr Ala Lys Ile Pro Phe Pro Asp
 1 5 10 15
 Tyr Arg Arg Met Asn Val Arg Leu Leu Tyr Asp Glu Gln Asn Arg Asp
 20 25 30
 Phe Ser Val Ile Ile Ile Lys Gln Ile Thr Ile Phe Ala Pro Cys Lys
 35 40 45
 Arg Gly Leu Tyr Ile Tyr Gln Lys Lys Gly Lys Ile Met Glu Lys Phe
 50 55 60
 Glu Asp Leu Ile Gln Ser Gln Ser Pro Val Leu Val Asp Phe Phe Ala
 65 70 75 80
 Glu Trp Cys Gly Pro Cys Lys Ala Met Lys Pro Ile Leu Glu Asp Leu
 85 90 95
 Lys Gln Gln Val Gly Glu Lys Ala Arg Ile Val Lys Ile Asp Val Asp
 100 105 110
 Thr His Glu Glu Leu Ala Val Lys Tyr Arg Ile Gln Ala Val Pro Thr
 115 120 125
 Phe Ile Leu Phe Lys Lys Gly Glu Ala Val Trp Arg His Ser Gly Met
 130 135 140
 Ile Gln Ala Ser Glu Leu Lys Gly Val Ile Glu Gln Tyr Thr
 145 150 155

<210> 5983
 <211> 337
 <212> PRT
 <213> B.fragilis

<400> 5983
 Ile Met Asn Val Arg Cys Phe Leu Trp Gly Ile Leu Phe Ile Thr Val
 1 5 10 15
 Ser Ser Cys Ile Glu Ser Asp Arg Ile Met His Tyr Ala Gln Phe Glu
 20 25 30
 His Thr Ile Asn Leu Lys Ser Asp Arg Ile Gln Val Pro Ser Val Leu
 35 40 45
 Leu Tyr Pro Arg Ser Leu Val Leu Cys Asp Ser Asn Leu Ile Val Phe
 50 55 60
 Asn Glu Lys Met Asp Thr Met Phe Gln Cys Phe His Leu Pro Asp Leu
 65 70 75 80
 Thr Phe Gln Tyr Gly Phe Gly Thr Gln Gly Gln Gly Pro Asn Asp Phe
 85 90 95
 Val Leu Pro Ser Ile Thr Pro Val Lys Tyr Gln Lys Asn Gly Phe Val
 100 105 110
 Met Leu Asp Gly Ile Asn Leu Lys His Ile Ser Val Lys Lys Asp Lys
 115 120 125
 Ala Ile Val Gln Thr Ser Thr Leu Asn Tyr Gly Phe Asn Cys Phe Asn

130	135	140
Asp Leu Ile Ser Ile	Ser Asp Ser Ser Tyr Cys Cys Asn Gly Gly Phe	
145	150	155
Glu Asn Glu Lys Glu	Phe Arg Phe Leu Tyr Pro Asp Gly Asn His Glu	160
	165	170
Ser Trp Gly Glu Tyr	Pro Glu Thr Glu Glu Arg Phe Gly Ser Val Leu	175
	180	185
Asp Arg Asn Gln Ala Tyr	Ile Lys Met Thr Val Ala Lys Pro Asp Lys	190
	195	200
Ser Cys Phe Val Ser Phe	Tyr Gln His Ile Arg Arg Phe Arg Ile Tyr	205
	210	215
Gly Lys Asp Gly Glu	Leu Lys Arg Asp Val Ile Leu Asp Ile Leu Pro	220
225	230	235
Gly Gln Glu Arg Pro	Glu Val Asp Asp Tyr Leu Arg Phe Ile His Pro	240
	245	250
Ile Ser Val Tyr Ala	Thr Asp Ser Tyr Ile Tyr Thr Leu Asn Leu Asp	255
	260	265
Met Thr Thr Glu Glu	Ile Glu Asn Arg Lys Thr Thr Pro Asn Ile Gln	270
	275	280
Val Phe Asp Trp Glu	Gly Lys Pro Leu Thr Gln Tyr Lys Leu Asp Cys	285
	290	295
Phe Ile Asn Thr Phe	Val Asp Glu Val Ala Asn Lys Ile Tyr Gly	300
305	310	315
Ala Phe Val Glu Asp	Glu Asp His Ile Tyr Val Phe Asn Leu Pro Arg	320
	325	330
Leu		335

<210> 5984
 <211> 349
 <212> PRT
 <213> B.fragilis

<400> 5984

Lys Gly Cys Val Ser	Cys Asn Ile Cys Asp Thr Ser Phe Cys Asn Phe
1	5
Ile Lys Val Met His	Lys Ile Ile Leu Tyr Ile Ile Ser Val Leu Thr
	20
Val Phe Thr Ser Cys	Thr Thr Thr Asp Val Pro Asp Lys Val Ser Leu
	35
Gln Pro Gln Val Met	Asn Asp Ser Leu Leu Thr Thr Met Pro Gly Asp
	50
Leu Leu Leu Ile Asp	Asp Tyr Leu Val Trp Ser Asp Pro Phe Ser Asp
65	70
Asn Lys Phe Leu His	Val His Arg Ser Ser Asp Gly Lys Tyr Ile Gly
	85
Ser Met Gly Gln Lys	Gly Glu Gly Pro Gln Glu Phe Val Ser Pro Leu
	100
Ile Asn Arg Phe Ser	Ile Asn Arg Cys Ile Ala Ala His Asp Ala Asn
	115
Gly Lys Thr Arg Gly	Tyr Leu Ser Ile Asp Ser Leu Ile Val Gly Lys
	130
Glu Pro Phe Met Ser	Leu Ser Asp Phe Asp Arg Asn Ile Arg Met Ala
145	150
Lys Leu Asp Glu Gln	Leu Tyr Leu Thr Glu Thr Glu Asn Gly Glu Asn
	165
Asp Tyr Phe Lys Val	Ser Ser Asn Gly Lys Lys Ser Thr Phe Gly Val
	180
Tyr Pro Ile Arg Glu	Val Lys His His Met Gly Thr Tyr Lys Thr Tyr
	185
	190

195 200 205
 Asp Lys Asp Arg Gly Leu Leu Ala Phe Gly Pro Phe Asn Phe Ser Tyr
 210 215 220
 Leu Ala Leu Tyr Lys Lys Glu Gly Asp Asn Phe Lys Leu Leu Trp Glu
 225 230 235 240
 Arg Met Pro Glu Lys Glu Asn Tyr Ser Val Val Asp Gly Ala Ile Arg
 245 250 255
 Phe Asp Arg Ser Val Met Gly Val Arg Asp Ile Cys Met Thr Lys Asp
 260 265 270
 Tyr Ile Val Thr Leu Glu Arg Asp Arg Glu Val Asp Pro Leu Asp Glu
 275 280 285
 Arg Thr Val Gly Arg Asn Ala Ser Lys Cys Pro Arg Thr Val Phe Val
 290 295 300
 Tyr Asp Tyr Asp Gly Lys Leu Leu Lys Ile Val Asn Leu Gly Met Pro
 305 310 315 320
 Val Met Arg Ile Ala Ala Asp Gly Arg Ser Asn Ala Leu Tyr Val Ile
 325 330 335
 Gly Val Asn Pro Asp Phe Ala Leu Ala Lys Tyr Asp Leu
 340 345

<210> 5985

<211> 598

<212> PRT

<213> B.fragilis

<400> 5985

Val Phe Phe Val Phe Leu Arg Lys Asn Leu Met Lys Met Asn Thr His
 1 5 10 15
 Ser Leu Phe Gly Tyr Leu Phe Ile Ala Leu Phe Ser Leu Leu Val Val
 20 25 30
 Ser Cys Tyr Ser Thr Pro Asp Gly Val Met Ser Ser Leu Ser Gln Ala
 35 40 45
 Glu Lys Ile Met Glu Ser Arg Pro Asp Ser Ala Met Ala Ile Leu Gln
 50 55 60
 His Ile Pro Thr Pro Glu Thr Leu His Gly Lys Ala Gln Ala Asp Tyr
 65 70 75 80
 Ser Leu Leu Met Thr Gln Ala Met Asp Lys Asn Tyr Ile Asn Phe Thr
 85 90 95
 Ser Asp Ser Leu Ile Lys Phe Ala Val Gly Tyr Tyr Gly Gly His Thr
 100 105 110
 Glu Asp Leu Val Ala Lys Gly Lys Ser Phe Tyr Tyr Tyr Gly Arg Val
 115 120 125
 Met Glu Ser Leu Asp Lys Val Glu Asp Ala Met Thr Phe Tyr Leu Lys
 130 135 140
 Ala Lys Asp Val Leu Gln Ser Ser Asp Gln Phe Lys Leu Leu Gly Leu
 145 150 155 160
 Ile Ser Glu Gly Ile Gly Thr Leu Asn Arg Lys Gln Lys Leu Phe Asp
 165 170 175
 Thr Ala Leu Asn Ser Tyr Lys Glu Ser Leu Thr Tyr Tyr Ser Leu Val
 180 185 190
 Pro Asp Ser Leu Cys Met Thr Tyr Ala Asn Arg Asn Ile Gly Arg Val
 195 200 205
 Phe Leu Tyr Lys Asn Arg Leu Asp Ser Ala Tyr Tyr Tyr Tyr Asp Lys
 210 215 220
 Ala Ile Tyr Ile Ser Asn Ala Asn Lys Tyr Val Ala Val Gly Ser Leu
 225 230 235 240
 Leu Leu Glu Leu Gly Val Ile His Arg Ser Glu Lys Asp Tyr Ile Gly
 245 250 255
 Ala Glu Arg Tyr Phe Leu Thr Phe Leu Glu Lys Glu Lys Thr Pro Asn

260 265 270
 Lys Leu Tyr Ser Gly Tyr Leu Ala Leu Gly Asn Leu Tyr Leu Tyr Met
 275 280 285
 Asn Arg Phe Glu Asp Ala Glu His Phe Leu Met Leu Cys Leu Asp Ser
 290 295 300
 Pro Asp Pro Val Val Lys Arg Asp Ala Cys Glu Cys Leu Tyr Asp Leu
 305 310 315 320
 Glu Lys Glu Ser Asn Lys Phe Lys Glu Ala Val Ile Tyr Lys Asp Ile
 325 330 335
 Ala Asp Ser Leu Arg Met Met Thr Gln Asp Ile Asp Thr Gln Asn Ala
 340 345 350
 Ile Ala Asp Leu Gln Gly Arg Tyr Asn Asn Glu Lys Trp Gln Arg Glu
 355 360 365
 Ser Leu Gln Ser Ser Ile Glu Lys Lys Asn Ile Leu Leu Ile Ser Ser
 370 375 380
 Phe Val Gly Phe Ile Ala Val Met Val Ile Ile Tyr Ile Tyr Tyr Lys
 385 390 395 400
 Tyr Arg Thr Asn Gln Lys Leu Val Lys Asp Ile Asn Glu Arg Ile Arg
 405 410 415
 Lys Asn Asp Val Asp Ile Lys Met Tyr Gln Arg Gln Ile Leu Asn Tyr
 420 425 430
 Gln Asp Leu Gln Lys Glu Thr Leu Gln Asp Tyr Arg Asn Gln Ile Gly
 435 440 445
 Glu Leu His Gly Lys Met Ser Val Leu Glu Asp Gln Asn Lys Ala Leu
 450 455 460
 Ser Leu Arg Leu Thr Glu Lys Lys His Asp Ile Pro Glu Ser Glu Ala
 465 470 475 480
 Asp Asp Leu Tyr Ala Ile Tyr Met Gln Ala Leu His Ile Leu Ile Met
 485 490 495
 Leu Arg Gly Lys Asn Ile Glu Asn Thr Ser Gly Gln Lys Leu Leu Leu
 500 505 510
 Asp Ala Asp Trp Asp Lys Leu Phe His Leu Ser Asn Ala Ile His Gly
 515 520 525
 Asp Phe Ile Thr Arg Ile Lys Asn Asp Phe Pro Thr Leu Thr Lys His
 530 535 540
 Asp Ile Glu Ile Cys Cys Leu Leu Arg Phe Gly Ile Glu His Glu Val
 545 550 555 560
 Leu Gly Ser Ile Phe Leu Thr Glu Thr Asp Ser Val Thr Lys Ala Lys
 565 570 575
 Arg Arg Met Lys Lys Arg Leu Asn Leu Ser Ala Ser Asp Asp Leu Asp
 580 585 590
 Val Phe Leu Lys Tyr
 595

<210> 5986

<211> 103

<212> PRT

<213> B.fragilis

<400> 5986

Asn Asn Asn Val Met Val Lys His Ile Val Leu Phe Lys Leu Arg Asp
 1 5 10 15
 Asp Val Pro Val Glu Glu Lys Leu Val Val Met Asn Ser Phe Lys Glu
 20 25 30
 Ala Ile Glu Ala Leu Pro Ala Lys Ile Ser Val Ile Arg Lys Ile Glu
 35 40 45
 Val Gly Leu Asn Met Asn Pro Gly Glu Thr Trp Asn Ile Ala Leu Tyr
 50 55 60
 Ser Glu Phe Asp Asn Leu Asp Asp Val Lys Phe Tyr Ala Thr His Pro

65 70 75 80
 Glu His Val Ala Ala Gly Lys Ile Leu Ala Glu Thr Lys Glu Ser Arg
 85 90 95
 Ala Cys Val Asp Tyr Glu Phe
 100

<210> 5987
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 5987
 Arg Asn Val Phe Gly Arg Gly Phe Tyr Ile Gly Gln Glu Phe Ile Ala
 1 5 10 15
 Tyr Gln Met Leu Lys Leu Arg Lys Asn Phe Ile Asp Asn Gln Lys Arg
 20 25 30
 Gln Gly Thr Pro Phe Glu Arg Lys Cys Thr Leu Ser Phe Tyr Tyr Ser
 35 40 45
 Ser Thr Ile Ser Ser Ser Leu Met Met Cys Glu Ala Pro Ala Tyr Leu
 50 55 60
 Ser Ile Ile Asn Arg Val
 65 70

<210> 5988
 <211> 287
 <212> PRT
 <213> B.fragilis

<400> 5988
 Val Ser Ala Phe Thr Tyr Cys Glu Leu Glu Phe Ile Ser Leu Gln Thr
 1 5 10 15
 Leu Lys Asn Arg Phe Met Lys Gln Leu Lys Leu Met Val Leu Thr Leu
 20 25 30
 Thr Leu Leu Met Gly Thr Met Phe Thr Ser Cys Met Asp Ser Gly Glu
 35 40 45
 Ser Gly Pro Gln Gln Trp Ala Gly Val Val Lys Val Asn Asp Arg Met
 50 55 60
 Gly Tyr Val Thr Phe Thr Asp Ala Ala Gly Thr Glu Leu Ile Pro Thr
 65 70 75 80
 Asn Thr Ile Pro Val Thr Leu Asn Ala Arg Met Ala Tyr Ile Tyr Cys
 85 90 95
 Gln Val Asp Glu Gly Gln Asp Leu Ser Thr Asn Pro Lys Ser Ile Lys
 100 105 110
 Ile Thr Leu Leu Ala Asp Pro Thr Gly Ile Asp Ala Thr Ala Ile Thr
 115 120 125
 Thr Pro Lys Val Glu Ser Ser Asp Val Thr Thr Asn Ala Pro Val Gly
 130 135 140
 Ser Leu Ser Phe Ala Ser Gly Tyr Ser Thr Val Ala Pro Phe Gln Phe
 145 150 155 160
 Ser Glu Asn Thr Ile Val Leu Pro Val Leu Tyr Arg Val Lys Asn Val
 165 170 175
 Thr Thr Thr Glu Asp Ile Lys Asn Glu Leu Ala Lys His Thr Phe Thr
 180 185 190
 Leu Val Cys Tyr Thr Asp Asp Ile Lys Ser Gly Asp Thr Ile Leu Lys
 195 200 205
 Leu Tyr Leu Arg Tyr Lys Val Glu Asp Glu Pro Ala Ala Ile Ala Glu
 210 215 220
 Arg Ala Thr Arg Thr Ser Ser Phe Lys Ala Tyr Glu Ile Ser Gln Ile
 225 230 235 240

Leu Arg Glu Tyr Thr Leu Lys Ser Gly Gln Thr Lys Pro Ala Lys Ile
 245 250 255
 Thr Ile Val Ala Gln Gln Asn Glu Tyr Asn Asn Lys Leu Glu Asp Thr
 260 265 270
 Ser Thr Ile Glu Lys Val Tyr Glu Ile Glu Tyr Lys Thr Ala Glu
 275 280 285

<210> 5989
 <211> 130
 <212> PRT
 <213> B.fragilis

<400> 5989
 Asn Met Lys Leu Arg Val Ile Leu Ser Leu Ile Val Val Leu Phe Ile
 1 5 10 15
 Gly Gln Ser Met Cys Ala Met Ser Thr Gln Ile Leu Arg Arg Pro Ile
 20 25 30
 Ile Leu Asp Gly Glu Ile Ile Glu Glu Ala Ser Arg Ser Ile Asn
 35 40 45
 Pro Leu Ile Pro Ile Ser Ala Asp Ile Asp Gly Thr Thr Leu Phe Ile
 50 55 60
 Glu Phe Thr Lys Val Ile Gly Asn Val Asp Ile Thr Val Lys Asp Asp
 65 70 75 80
 Thr Lys Lys Glu Val Tyr Ser Ser Ser Val Asp Val Thr Ala Ala Asn
 85 90 95
 Gln Ala Thr Ser Phe Ser Ile Ala Asp Leu Ala Pro Gly Thr Tyr Leu
 100 105 110
 Leu Glu Phe Thr Asn Ser Asn Gly Gly Tyr Val Tyr Gly Gln Phe Ile
 115 120 125
 Val Glu
 130

<210> 5990
 <211> 237
 <212> PRT
 <213> B.fragilis

<400> 5990
 Met Met Ala Ser Met Leu Leu Lys Ala Leu Ser Ser Ile Ser Ile Ser
 1 5 10 15
 Leu Met Ala Leu Pro Thr Pro Gly Ile Ile Glu Ala Ser Ser Phe Arg
 20 25 30
 Leu Pro Ile Phe Leu Ile Trp Asp Ile Trp Leu Arg Lys Ser Leu Lys
 35 40 45
 Ser Asn Trp Phe Leu Ala Ile Phe Phe Trp Arg Arg Leu Ala Ser Ser
 50 55 60
 Ser Ser Tyr Cys Ser Cys Ala Arg Ser Thr Asn Glu Thr Met Ser Pro
 65 70 75 80
 Ile Pro Arg Ile Arg Ser Ala Ile Arg Ala Gly Trp Asn Trp Ser Met
 85 90 95
 Ala Ser Ser Phe Ser Pro Val Pro Thr Asn Leu Ile Gly Leu Phe Thr
 100 105 110
 Thr Glu Arg Ile Glu Arg Ala Ala Pro Pro Arg Val Ser Pro Ser Ser
 115 120 125
 Leu Val Ser Thr Thr Pro Ser Lys Ser Arg Arg Ser Leu Asn Ser Leu
 130 135 140
 Ala Val Leu Thr Ala Ser Cys Pro Val Ile Glu Ser Thr Thr Asn Arg
 145 150 155 160
 Ile Ser Leu Gly Trp Met Ala Ser Leu Met Ala Ala Ile Ser Phe Ile

165 170 175
 Ile Cys Ser Ser Thr Ala Arg Arg Pro Ala Val Ser Thr Ile Thr Arg
 180 185 190
 Ser Tyr Pro Leu Ala Arg Ala Ser Leu Met Ala Phe Met Ala Met Glu
 195 200 205
 Thr Gly Ser Leu Leu Ser Ile Ser Glu Tyr Ile Gly Thr Ser Ile Cys
 210 215 220
 Ser Ala Asn Thr Arg Ser Cys Ser Ile Ala Ala Gly Arg
 225 230 235

<210> 5991
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 5991
 Cys Gly Phe Pro Gly Val Phe Phe Leu Leu Ala Lys Lys Lys Cys Phe
 1 5 10 15
 Val Phe Lys Arg Leu Val Leu Cys Lys Gln Asn Thr Cys Phe Asn Thr
 20 25 30
 Leu Leu Asn Gln Ala Phe Tyr Ile Leu Lys Val Lys Ser Phe Lys Leu
 35 40 45
 Leu Ile Gln Ser Gly Ser Leu Phe Leu Val Phe Leu Leu Ser Cys
 50 55 60
 Leu Ser Gly Cys Asp Asp Arg Trp Tyr Leu Ser Lys Pro Gln
 65 70 75

<210> 5992
 <211> 382
 <212> PRT
 <213> B.fragilis

<400> 5992
 Tyr Ser Ser Leu Asn Lys Arg Ile Met Ile Lys Arg Ile Lys Ile Leu
 1 5 10 15
 Ala Thr Gly Ala Leu Leu Leu Ala Gly Leu Gly Ala Cys Ser Pro Ser
 20 25 30
 Gly Lys Lys Thr Gly Ala Asp Ser Thr Val Asp Thr Leu Arg Thr Ala
 35 40 45
 Glu Thr Val Asn Leu Leu Asn Asn Leu Arg Lys Val Pro Thr Gln Gly
 50 55 60
 Ile Met Phe Gly His His Asp Asp Pro Leu Tyr Gly Val Gly Trp Glu
 65 70 75 80
 Gly Asp Glu Asp Arg Ser Asp Val Lys Ser Val Cys Gly Asp Tyr Pro
 85 90 95
 Ala Val Met Ser Phe Asp Leu Gly His Ile Glu Leu Glu Arg Glu Lys
 100 105 110
 Ser Leu Asp Asn Val Pro Phe Arg Lys Ile Arg Gln Glu Thr Ile Asn
 115 120 125
 Gln Tyr Lys Arg Gly Gly Val Val Ser Phe Ser Trp His Leu Asp Asn
 130 135 140
 Pro Leu Thr Gly Lys Asp Ala Trp Asp Val Ser Asp Thr Thr Val Val
 145 150 155 160
 Ala Ser Ile Leu Pro Gly Gly Val His His Ala Lys Phe Ile Ser Trp
 165 170 175
 Leu Asp Ala Val Ala Ala Phe Met Asn Thr Leu Glu Thr Glu Glu Gly
 180 185 190
 Thr Lys Ile Pro Val Ile Phe Arg Pro Trp His Glu His Thr Gly Ser
 195 200 205

Trp Phe Trp Trp Gly Gln Asn Leu Cys Thr Ala Asp Gln Tyr Lys Ala
 210 215 220
 Leu Trp Arg Met Thr His Asp Arg Met His Ala Arg Gly Val Lys Asn
 225 230 235 240
 Leu Leu Tyr Ala Tyr Ser Pro Gly Ser Glu Pro Lys Asp Ser Thr Ala
 245 250 255
 Tyr Leu Glu Arg Tyr Pro Gly Asp Asp Ile Ile Asp Leu Val Gly Phe
 260 265 270
 Asp Thr Tyr Gln Phe Asp Arg Thr Gln Tyr Met Glu Gln Leu Asp Lys
 275 280 285
 Ser Leu Ala Ile Leu Thr Glu Val Gly Lys Ala His Asp Lys Pro Ile
 290 295 300
 Ala Ile Thr Glu Thr Gly Phe Glu Ala Ile Pro Asp Ser Val Trp Trp
 305 310 315 320
 Thr Gln Thr Leu Tyr Pro Val Ile Ser Lys Tyr Pro Ile Ser Tyr Val
 325 330 335
 Leu Val Trp Arg Asn Ala Arg Glu Arg Val Asn His Tyr Tyr Ala Pro
 340 345 350
 Tyr Pro Gly Gln Val Ser Ala Asp Asp Phe Val Lys Phe Tyr Arg Glu
 355 360 365
 Pro Lys Thr Leu Phe Val Ser Asp Val Lys Asn Leu Tyr Lys
 370 375 380

<210> 5993
 <211> 519
 <212> PRT
 <213> B.fragilis

<400> 5993

Ser Gln Arg Pro Leu Ala Thr Ile Val Asp Arg Pro Asp His Leu Ser
 1 5 10 15
 Asp Ser Pro Val Cys Arg Arg Arg Met Ser Val Gln Tyr Val Cys Thr
 20 25 30
 His Pro Cys Gly Arg Arg Ala Lys Thr Ala Pro Leu Ala Asp Phe Tyr
 35 40 45
 Leu Pro Ala Asp Leu Arg Asn Pro Phe Pro Arg Asn Ser Ile Phe Tyr
 50 55 60
 Arg Arg Phe Leu Asn Lys Gln Val Met Thr Lys Lys Asn Leu Leu Lys
 65 70 75 80
 Gly Ile Cys Leu Leu Trp Leu Leu Leu Ala Val Thr Pro Val Leu Gln
 85 90 95
 Ala Gln Asp Arg Ala Gln Gln Ala Ser Glu Leu Leu Asp Arg Leu Ile
 100 105 110
 Ala Gly Gln Gly Asp Ser Val Tyr Val His Leu Asp Asp Asn Ile Arg
 115 120 125
 Lys Met Leu Ser Val Glu Met Leu Asn Gly Leu Phe Lys Gln Leu Glu
 130 135 140
 Gln Gln Ala Gly Lys Tyr Gln Ser His Gly Glu Trp Asn Thr Glu Pro
 145 150 155 160
 Ile Asn Gly Met Thr Ile Tyr Tyr Cys Asp Val Lys Phe Glu Arg Leu
 165 170 175
 Pro Leu Arg Phe Leu Thr Ala Phe Asn Pro Asp Gly Lys Val Asn Thr
 180 185 190
 Ile Arg Phe Val Pro Val Pro Ala Glu Lys Thr Thr Pro Pro Thr Thr
 195 200 205
 Ser Val Gln Asp Lys Ile Lys Glu Thr Asp Ile Gln Val Cys Thr Gly
 210 215 220
 Asn Phe Lys Leu Pro Gly Thr Leu Thr Leu Pro Lys Asn Gly Lys Asp
 225 230 235 240

Leu Pro Val Val Ile Leu Val His Gly Ser Gly Ala Ser Asp Arg Asp
 245 250 255
 Glu Thr Val Gly Ala Asn Lys Pro Phe Arg Asp Leu Ala Tyr Gly Leu
 260 265 270
 Ala Glu Arg Gly Ile Ala Val Ile Arg Tyr Asp Lys Arg Thr Lys Val
 275 280 285
 Tyr Gly Ala Asp Ser Ala Pro Ala Gly Lys Glu Ile Thr Phe Asp Glu
 290 295 300
 Glu Ser Val Asp Asp Ala Leu Ser Ala Ile Lys Leu Ala Arg Ser Ile
 305 310 315 320
 Pro Thr Ile Asn Pro Glu Arg Ile Tyr Ile Leu Gly His Ser Leu Gly
 325 330 335
 Gly Thr Leu Ala Pro Arg Ile Ala Gln Arg Ser Asp Lys Val Pro Ala
 340 345 350
 Gly Ile Ile Leu Leu Ala Gly Ala Ala Arg Pro Leu Glu Asp Leu Phe
 355 360 365
 Ile Ser Gln Val Lys Phe Leu Ala Ser Ala Leu Pro Ser Ala Lys Asp
 370 375 380
 Ile Glu Lys Glu Ile Ala Glu Leu Gln Lys Gln Val Asp Asn Val Lys
 385 390 395 400
 Arg Leu Gly Thr Asp Thr Phe Asp Ile Thr Thr Pro Leu Pro Met Asn
 405 410 415
 Leu Ser Gln Ala Tyr Trp Met Leu Ala Asn Gln Tyr Lys Pro Leu Glu
 420 425 430
 Val Val Arg Lys Leu Thr Leu Pro Ile Leu Val Leu Gln Gly Glu Arg
 435 440 445
 Asp Tyr Gln Val Thr Met Gln Asp Phe Glu Leu Trp Gln Ser Ala Leu
 450 455 460
 Ala Lys His Pro Asn Ala Ile Phe Lys Ser Tyr Pro Arg Leu Asn His
 465 470 475 480
 Leu Phe Gln Glu Gly Glu Gly Lys Ser Thr Pro Leu Glu Tyr Ser Arg
 485 490 495
 Pro Ser Ser Ile Pro Ser Tyr Val Thr Asp Asp Ile Ala Ala Phe Ile
 500 505 510
 Asn Arg Pro Lys Pro Gly Asn
 515

<210> 5994

<211> 522

<212> PRT

<213> B.fragilis

<400> 5994

Tyr Ile Ile Thr Met Asn Lys Lys Ile Ile Ile Pro Leu Ala Leu Ala
 1 5 10 15
 Pro Leu Ala Ala Pro Ala Leu Gln Ala Gln His Gln Gln Pro Asn Gly
 20 25 30
 Arg Thr Asp Thr Arg Pro Asn Ile Ile Leu Phe Met Val Asp Asp Met
 35 40 45
 Gly Trp Gln Asp Thr Ser Leu Pro Phe Trp Thr Gln Lys Thr His Tyr
 50 55 60
 Asn Glu Val Tyr Glu Thr Pro Asn Met Glu Arg Leu Ala Lys Gln Gly
 65 70 75 80
 Met Met Phe Thr Gln Ala Tyr Ala Ser Ser Ile Ser Ser Pro Thr Arg
 85 90 95
 Cys Ser Leu Ile Thr Gly Thr Asn Ala Ala Arg His Arg Val Thr Asn
 100 105 110
 Trp Thr Tyr Pro Lys Gly Gln Gln Thr Asp Arg Pro Ser Asp Val Phe
 115 120 125

Asn Val Ala Asp Trp Asn Val Asn Gly Val Cys Gln Val Pro Asn Ile
 130 135 140
 Asp His Thr Phe Gln Ala Thr Ser Leu Ala Glu Ile Leu Lys Asp Asn
 145 150 155 160
 Gly Tyr His Thr Ile His Cys Gly Lys Ala His Phe Gly Ala Val Asn
 165 170 175
 Thr Pro Gly Glu Ser Pro Tyr His Met Gly Phe Glu Val Asn Ile Ala
 180 185 190
 Gly His Ala Gly Gly Gly Leu Ala Ser Tyr Leu Gly Glu Asn Asn Tyr
 195 200 205
 Gly Asn Arg Thr Asp Gly Lys Pro Asn Pro Trp Phe Ala Val Pro Gly
 210 215 220
 Leu Glu Lys Tyr Trp Gly Thr Asp Thr Phe Val Ser Glu Ala Leu Thr
 225 230 235 240
 Leu Glu Ala Ile Lys Ala Leu Asp His Ala Lys Glu Tyr Asn Gln Pro
 245 250 255
 Phe Phe Leu Tyr Met Ala His Tyr Ala Ile His Val Pro Ile Asp Lys
 260 265 270
 Asp Lys Arg Phe Tyr Gln Lys Tyr Ile Asn Lys Gly Leu Thr Pro Lys
 275 280 285
 Glu Ala Ala Tyr Ala Ala Leu Ile Glu Gly Met Asp Lys Ser Leu Gly
 290 295 300
 Asp Leu Met Asp Trp Leu Asp Lys Asn Gly Glu Ala Asp Asn Thr Ile
 305 310 315 320
 Val Ile Phe Met Ser Asp Asn Gly Gly Leu Ser Ser Glu Pro Glu Trp
 325 330 335
 Arg Asp Gly Lys Leu His Thr Gln Asn Ser Pro Leu Asn Ser Gly Lys
 340 345 350
 Gly Ser Ala Tyr Glu Gly Gly Val Arg Glu Pro Met Ile Val Arg Trp
 355 360 365
 Pro Gly Val Val Lys Pro Asp Thr Lys Cys Asp Lys Tyr Leu Ile Ile
 370 375 380
 Glu Asp Phe Tyr Pro Thr Ile Leu Glu Met Ala Gln Ile Lys His Tyr
 385 390 395 400
 Lys Thr Val Gln Pro Ile Asp Gly Ile Ser Phe Met Pro Leu Leu Thr
 405 410 415
 His Thr Gly Asp Pro Ser Lys Gly Arg Ser Leu His Trp Asn Phe Pro
 420 425 430
 Asn His Trp Gly Asn Asp Gly Pro Gly Ile Gly Pro Thr Cys Thr Val
 435 440 445
 Arg Lys Gly Asp Trp Lys Leu Ile Tyr Tyr Tyr Asp Ser Gly Lys Lys
 450 455 460
 Glu Leu Phe Asn Ile Pro Glu Asp Ile Gly Glu Lys Asn Asp Leu Ala
 465 470 475 480
 Ala Leu His Pro Asp Ile Val Lys Ser Leu Ser Lys Glu Leu Gly Asp
 485 490 495
 Tyr Leu Arg Lys Val Gly Gly Gln Arg Pro Ser Phe Lys Ala Thr Gly
 500 505 510
 Lys Pro Cys Pro Trp Pro Asp Glu Ile Lys
 515 520

<210> 5995

<211> 106

<212> PRT

<213> B.fragilis

<400> 5995

Lys Arg Ile Thr Asn Gly Cys Ser Cys Gly Lys Leu His Gly Tyr Pro
 1 5 10 15


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<210> 5996
<211> 469
<212> PRT
<213> B.fragilis
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Asn	Lys	Lys	Thr	Lys	Asn	Arg	Met	Thr	Ala	Met	Ile	Thr	Leu	Lys	Glu
1				5					10					15	
Lys	Ile	Gly	Tyr	Gly	Leu	Gly	Asp	Met	Ala	Ser	Ser	Met	Phe	Trp	Lys
			20					25					30		
Leu	Phe	Gly	Ser	Tyr	Leu	Met	Ile	Phe	Tyr	Thr	Asp	Val	Phe	Gly	Leu
		35					40					45			
Pro	Ala	Ala	Val	Val	Gly	Thr	Met	Phe	Leu	Ile	Thr	Arg	Val	Trp	Asp
	50					55					60				
Ser	Ala	Phe	Asp	Pro	Ile	Val	Gly	Val	Ile	Ala	Asp	Arg	Thr	Gln	Thr
65					70					75					80
Arg	Trp	Gly	Lys	Phe	Arg	Pro	Tyr	Leu	Leu	Tyr	Leu	Ala	Val	Pro	Phe
				85					90					95	
Ala	Leu	Ile	Gly	Ile	Phe	Thr	Phe	Thr	Thr	Pro	Glu	Leu	Asn	Asp	Thr
			100					105						110	
Gly	Lys	Leu	Val	Tyr	Ala	Tyr	Ile	Thr	Tyr	Ser	Leu	Met	Met	Met	Val
		115					120					125			
Tyr	Ser	Ala	Ile	Asn	Val	Pro	Tyr	Ala	Ser	Leu	Leu	Gly	Val	Ile	Ser
	130					135					140				
Pro	Asp	Pro	Lys	Glu	Arg	Asn	Thr	Leu	Ser	Thr	Tyr	Arg	Met	Thr	Phe
145					150					155					160
Ala	Tyr	Ile	Gly	Ser	Phe	Ile	Ala	Leu	Leu	Leu	Phe	Met	Pro	Met	Val
				165					170					175	
Asn	Leu	Phe	Gly	Gly	Ala	Glu	Asp	Glu	Gln	Arg	Gly	Trp	Met	Leu	Ser
			180					185					190		
Val	Val	Val	Ile	Ala	Val	Met	Cys	Ala	Ala	Leu	Phe	Tyr	Leu	Cys	Phe
		195					200					205			
Ala	Leu	Thr	Arg	Glu	Arg	Val	Lys	Pro	Ile	Arg	Glu	Val	Gln	Asn	Ser
	210					215					220				
Leu	Lys	Asp	Asp	Leu	Lys	Asp	Leu	Leu	His	Asn	Arg	Pro	Trp	Trp	Ile
225					230					235					240
Leu	Leu	Gly	Ala	Gly	Val	Ala	Ala	Leu	Val	Phe	Asn	Ser	Ile	Arg	Asp
				245					250					255	
Gly	Ala	Thr	Val	Tyr	Tyr	Phe	Lys	Tyr	Phe	Val	Val	Glu	Glu	Asp	Tyr
			260					265				270			
Ser	Thr	Val	Ser	Phe	Phe	Gly	Val	Ser	Phe	Val	Leu	Ser	Gly	Leu	Tyr
	275						280					285			
Leu	Ala	Val	Gly	Gln	Ala	Ala	Asn	Ile	Val	Gly	Val	Ile	Leu	Ala	Ala
	290					295					300				
Pro	Val	Ser	Asn	Arg	Ile	Gly	Lys	Lys	Asn	Thr	Tyr	Met	Gly	Ala	Met
305					310					315					320

[illegible]

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<210> 5997
<211> 664
<212> PRT
<213> B.fragilis
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[illegible]

Ile Asn Ile Asp Ser Glu Ile Lys Tyr Phe Leu Thr Glu Ala Lys Thr
 260 265 270
 Ala Ala Gln Ile Val Ala Asp Lys Tyr Thr Leu Phe Asn Asp Tyr Pro
 275 280 285
 Ser Leu Phe Asn Ser Gln Ser Leu Ala Asn Ala Ser Glu Val Leu Leu
 290 295 300
 Trp Arg Ala Tyr Asp Ala Ser Leu Thr Pro Ala Val Asn His Phe Val
 305 310 315 320
 Val Gly Tyr Ile Gln Arg Asn Gly Gly Gly Asn Thr Gly Trp Thr Arg
 325 330 335
 Ser Met Met Gln Ser Tyr Leu Met Glu Asn Gly Leu Pro Ile Tyr Ala
 340 345 350
 Asn Asn Ser Gly Tyr Gln Gly Asp Lys Thr Tyr Glu Ala Val Ala Thr
 355 360 365
 Asn Arg Asp Pro Arg Leu Ile Tyr Asn Thr Leu Leu Pro Gly Asp Leu
 370 375 380
 Leu Ser Glu Gly Gly Ser Asn Ile Glu Tyr Leu Val Lys Gly Tyr Gly
 385 390 395 400
 Tyr Tyr Tyr Arg Ala Pro Ile Val Leu Gly Gln Asp Glu Asn Lys Cys
 405 410 415
 Pro Thr Gly Tyr Ser Val Lys Lys Gly Leu Ala Thr Asp Ala Ala Gln
 420 425 430
 Gly Pro Thr Leu Pro Ser Thr Thr Ala Cys Val Ile Phe Arg Ala Ala
 435 440 445
 Glu Ala Tyr Leu Asn Tyr Met Glu Ala Asp Tyr Glu Leu Asn Asn Ser
 450 455 460
 Leu Asp Ala Asn Ser Ser Lys Tyr Trp Lys Ala Leu Arg Asn Arg Ala
 465 470 475 480
 Gly Met Asp Thr Asp Phe Gln Lys Thr Ile Asp Ala Thr Asp Leu Ser
 485 490 495
 Lys Glu Ile Asp Phe Ala Arg Tyr Ser Gly Ser Glu Phe Val Ser Thr
 500 505 510
 Thr Leu Tyr Asn Ile Arg Arg Glu Arg Arg Ile Glu Phe Ala Ala Glu
 515 520 525
 Gly Leu Arg Leu Asn Asp Leu Lys Arg Trp Arg Ala Leu Asp Met Met
 530 535 540
 Gln Gly Tyr His Val Glu Gly Phe Asp Leu Trp Ser Glu Asn Tyr Gln
 545 550 555 560
 Arg Tyr Lys Thr Pro Ser Pro Ile Pro Val Ala Asp Val Thr Leu Ser
 565 570 575
 Val Ile Asn Leu Ile Glu Ser Gly Asn Asn Asn Ala Asn Val Ser Ala
 580 585 590
 Lys Ser Glu Ser Arg Tyr Leu Arg Pro Tyr Arg Ile Asn Thr Asn Asn
 595 600 605
 Ile Ala Tyr Asn Gly Tyr Asn Trp Asn Gln Asn Lys Tyr Leu Asn Pro
 610 615 620
 Ile Ala Phe Asp His Phe Arg Leu Thr Thr Ala Glu Glu Gly Ser Thr
 625 630 635 640
 Asp Tyr Thr Thr Ser Thr Ile Tyr Gln Asn Pro Gly Trp Lys Ile Glu
 645 650 655
 Thr Ser Ser Leu Pro Glu Gly Asp
 660

<210> 5998

<211> 216

<212> PRT

<213> B.fragilis

<400> 5998

Met Ile Lys Ala Met Asn Asn Leu Asn Glu Leu Tyr Glu Ala Ile Leu
1 5 10 15
Ala Gly Lys Leu Glu Gln Ala Val Ser Val Thr Arg Glu Ala Val Ala
20 25 30
Gly Gly Ala Ala Pro Gln Glu Ile Ile Asn Glu Tyr Met Ile Lys Ala
35 40 45
Met Glu Ala Ile Gly Ala Arg Phe Glu Ser Gly Gln Val Phe Val Pro
50 55 60
Asn Leu Leu Met Ser Ala Arg Ala Met Arg Gly Ala Leu Asp Ile Leu
65 70 75 80
Lys Pro Leu Met Gln Gly Gln Val Asn Ser Tyr Ile Gly Arg Ile Val
85 90 95
Ile Gly Thr Val Lys Gly Asp Leu His Asp Ile Gly Lys Asn Leu Val
100 105 110
Ala Ser Met Phe Glu Gly Cys Gly Phe Glu Val Ile Asn Leu Gly Val
115 120 125
Asp Val Ser Ser Asp Lys Phe Ile Ser Ala Ala Leu Glu Asn Lys Ala
130 135 140
Asp Ile Ile Cys Met Ser Ala Leu Leu Thr Thr Thr Met Asn Tyr Met
145 150 155 160
Lys Glu Val Ile Asp Ala Leu Glu Thr Ser Gly Leu Arg Gly Lys Val
165 170 175
Lys Val Met Val Gly Gly Ala Pro Val Ser Asp Ala Phe Ala Lys Ser
180 185 190
Ile Gly Ala Asp Ala Tyr Thr Ser Asn Ala Asn Ala Ala Val Ile Met
195 200 205
Ala Lys Lys Leu Ile Asn Ala Cys
210 215

<210> 5999

<211> 637

<212> PRT

<213> B.fragilis

<400> 5999

Ile Met Glu Tyr Thr Ile Leu Ile Leu Leu Leu Pro Phe Leu Ser Phe
1 5 10 15
Leu Ala Leu Gly Ile Gly Gly Lys Trp Met Ser His Arg Thr Ala Gly
20 25 30
Thr Ile Gly Thr Leu Val Leu Ala Ala Val Thr Val Leu Ser Tyr Val
35 40 45
Thr Ala Val His Tyr Phe Ser Ala Pro Arg Leu Ala Asp Gly Thr Phe
50 55 60
Ala Thr Leu Ile Pro Tyr Asn Phe Glu Trp Leu Pro Phe Thr Glu Thr
65 70 75 80
Leu Thr Phe Asn Leu Gly Ile Leu Leu Asp Pro Ile Ser Val Met Met
85 90 95
Leu Ile Val Ile Ser Thr Val Ser Leu Met Val His Ile Tyr Ser Phe
100 105 110
Gly Tyr Met Lys Gly Glu Arg Gly Phe Gln Arg Tyr Tyr Ala Phe Leu
115 120 125
Ser Leu Phe Thr Met Ser Met Leu Gly Leu Val Val Ala Thr Asn Ile
130 135 140
Phe Gln Met Tyr Leu Phe Trp Glu Leu Val Gly Val Ser Ser Tyr Leu
145 150 155 160
Leu Ile Gly Phe Tyr Tyr Thr Arg Pro Ala Ala Ile Ala Ala Ser Lys
165 170 175
Lys Ala Phe Ile Val Thr Arg Phe Ala Asp Leu Gly Phe Leu Ile Gly
180 185 190

Ile	Leu	Ile	Tyr	Gly	Tyr	Tyr	Gly	Gly	Thr	Phe	Gly	Phe	Thr	Pro	Asp
		195					200				205				
Thr	Val	Ser	Met	Leu	Ser	Gly	Gly	Ala	Gly	Met	Leu	Pro	Leu	Ala	Leu
	210					215					220				
Gly	Leu	Met	Phe	Val	Gly	Gly	Ala	Gly	Lys	Ser	Ala	Met	Phe	Pro	Leu
225					230					235					240
His	Ile	Trp	Leu	Pro	Asp	Ala	Met	Glu	Gly	Pro	Thr	Pro	Val	Ser	Ala
			245						250					255	
Leu	Ile	His	Ala	Ala	Thr	Met	Val	Val	Ala	Gly	Val	Tyr	Leu	Val	Ala
		260						265					270		
Arg	Met	Phe	Pro	Leu	Phe	Ile	Glu	Tyr	Ala	Pro	Asp	Val	Leu	His	Leu
		275					280					285			
Ile	Gly	Trp	Val	Gly	Ala	Phe	Thr	Ala	Phe	Tyr	Ala	Ala	Ser	Val	Ala
	290					295					300				
Cys	Val	Gln	Ser	Asp	Ile	Lys	Arg	Val	Leu	Ala	Phe	Ser	Thr	Ile	Ser
305					310					315					320
Gln	Ile	Gly	Phe	Met	Ile	Val	Ala	Leu	Gly	Val	Cys	Thr	Ser	Ser	Asp
			325						330					335	
Pro	His	His	Gly	Gly	Leu	Gly	Tyr	Met	Ala	Gly	Met	Phe	His	Leu	Phe
			340					345					350		
Thr	His	Ala	Met	Phe	Lys	Ala	Leu	Leu	Phe	Leu	Gly	Ala	Gly	Ser	Ile
		355					360					365			
Ile	His	Ala	Val	His	Ser	Asn	Glu	Met	Ser	Ala	Met	Gly	Gly	Leu	Arg
	370					375					380				
Lys	Tyr	Met	Pro	Ile	Thr	His	Ile	Thr	Phe	Leu	Ile	Ala	Cys	Leu	Ala
385					390					395					400
Ile	Ala	Gly	Ile	Pro	Pro	Phe	Ser	Gly	Phe	Phe	Ser	Lys	Asp	Glu	Ile
				405					410					415	
Leu	Ala	Ala	Cys	Phe	Gln	Tyr	Ser	Pro	Thr	Met	Gly	Trp	Val	Met	Thr
			420					425					430		
Val	Ile	Ala	Ala	Met	Thr	Ala	Phe	Tyr	Met	Phe	Arg	Leu	Tyr	Tyr	Gly
		435					440					445			
Ile	Phe	Trp	Gly	Gly	Thr	Ala	Pro	Gly	Gln	Lys	Ser	Thr	Ser	Asp	Gly
	450					455					460				
Thr	Ser	His	Val	His	Thr	Pro	His	Glu	Ser	Pro	Leu	Thr	Met	Thr	Val
465					470					475					480
Pro	Leu	Ile	Phe	Leu	Ala	Ala	Val	Thr	Cys	Val	Ala	Gly	Phe	Ile	Pro
				485					490					495	
Phe	Gly	His	Phe	Ile	Ser	Ser	Asn	Gly	Glu	Ser	Tyr	Thr	Ile	His	Leu
			500					505					510		
Glu	Thr	Ser	Val	Ala	Val	Thr	Ser	Val	Val	Ile	Ala	Val	Ala	Ser	Ile
		515					520					525			
Val	Leu	Ala	Thr	Cys	Met	Tyr	Leu	Arg	Gln	Gln	Gln	Pro	Leu	Ala	Asp
	530					535					540				
Lys	Leu	Ala	Lys	Arg	Phe	Ala	Gly	Leu	His	Arg	Ala	Ala	Tyr	His	Arg
545					550					555					560
Phe	Tyr	Ile	Asp	Glu	Val	Tyr	Gln	Phe	Ile	Thr	His	Arg	Ile	Ile	Phe
			565						570					575	
Arg	Cys	Ile	Ser	Thr	Pro	Ile	Ala	Trp	Phe	Asp	Arg	His	Val	Val	Asp
			580					585					590		
Gly	Phe	Phe	Asn	Phe	Ile	Ala	Trp	Gly	Thr	His	Ala	Thr	Ser	Asp	Glu
		595					600					605			
Ile	Arg	Gly	Leu	Gln	Ser	Gly	Arg	Val	Gln	Gln	Tyr	Ala	Tyr	Val	Phe
	610					615					620				
Leu	Leu	Gly	Ala	Leu	Ile	Leu	Ile	Leu	Ile	Leu	Ile	Leu			
625					630						635				

<210> 6000

<211> 439

<212> PRT

<213> B.fragilis

<400> 6000

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Ile Lys Tyr Leu Met Ile Met Lys Ile Leu Ser Thr Ile Leu Leu Thr
1      5      10      15
Leu Leu Ile Val Phe Gly Ala Cys Thr Ser Pro Gln Val Ser Pro Asp
20      25      30
Pro Phe Val Arg Val Ser Asn Gly Arg Leu Thr Val Asn Gly Asn Pro
35      40      45
Tyr Tyr Tyr Ile Gly Thr Asn Phe Trp Tyr Gly Ala Ile Leu Gly Ser
50      55      60
Gln Gly Gln Gly Gly Asn Arg Glu Arg Leu Leu Arg Glu Leu Asp Tyr
65      70      75      80
Leu Lys Ala Leu Gly Ile Asn Asn Leu Arg Val Leu Val Gly Ala Asp
85      90      95
Gly Lys Asp Gly Ile Pro Thr Lys Ala Glu Pro Ala Leu Gln Val Glu
100     105     110
Ala Gly Val Tyr Asn Asp Thr Ile Phe Asp Gly Leu Asp Phe Phe Leu
115     120     125
Ser Glu Val Asp Lys Arg Asp Met Tyr Ala Val Leu Phe Leu Asn Asn
130     135     140
Ser Trp Glu Trp Ser Gly Tyr Ser Gln Tyr Leu Tyr Trp Ala Gly
145     150     155     160
His Gly Glu Val Pro Met Pro Asn Val Ala Gly Trp Asp Ala Phe Ser
165     170     175
Asn Tyr Val Ala Gln Tyr Ala Lys Ser Glu Lys Ala His His Leu Phe
180     185     190
Arg Asp His Ile Thr His Val Val Asn Arg Val Asn Arg Tyr Thr Gly
195     200     205
Lys Lys Tyr Ser Glu Asp Pro Ala Ile Met Ser Trp Gln Ile Gly Asn
210     215     220
Glu Pro Arg Ser Phe Gly Glu Asp Asn Lys Lys Ser Phe Ala Ala Trp
225     230     235     240
Ile Ala Asp Cys Ala Ala Leu Ile Lys Ser Met Asp Ser Asn His Leu
245     250     255
Val Ser Ile Gly Ser Glu Gly Met Ala Gly Cys Glu Gly Asp Leu Ser
260     265     270
Leu Trp Thr Ser Ile His Ala Asp Ala Asn Val Asp Tyr Thr Thr Ile
275     280     285
His Ile Trp Pro Asn Asn Trp Gly Trp Ile Asp Lys Lys Asp Ile Pro
290     295     300
Gly Thr Ile Gly Gln Ala Ile Glu Asn Thr Cys Ser Tyr Ile Asp Met
305     310     315     320
His Val Gln Glu Ala Phe Lys Ile Asn Lys Pro Leu Val Leu Glu Glu
325     330     335
Phe Gly Leu Pro Arg Asp Ser Val Lys Phe Thr Ser Asn Thr Ser Thr
340     345     350
Val Gln Arg Asp Arg Tyr Tyr Arg Ala Val Phe Asp Ile Val Glu Lys
355     360     365
His Ala Ala Glu Lys Gly Val Phe Gln Gly Cys Asn Phe Trp Ala Trp
370     375     380
Gly Gly Phe Ala Glu Pro Gln His Leu Phe Trp Gln Arg Gly Asp Asp
385     390     395     400
Tyr Met Gly Asp Pro Gly Gln Glu Glu Gln Gly Leu Asn Ser Val Tyr
405     410     415
Ala Thr Asp Ser Thr Ile Asn Met Ile Lys Glu Ala Val Ser Asp Ile
420     425     430
Asn Gln Ile Ile Gln Lys Gln

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435

<210> 6001
 <211> 396
 <212> PRT
 <213> B.fragilis

<400> 6001

Phe	Arg	His	His	Met	Asp	Glu	Ile	Leu	Lys	Gln	Glu	Met	Gln	Lys	Glu
1				5					10					15	
Leu	Thr	Thr	Arg	Ile	Leu	Pro	Tyr	Trp	Met	Glu	Arg	Met	Val	Asp	Gln
			20					25					30		
Glu	Asn	Gly	Gly	Phe	Tyr	Gly	Arg	Ile	Thr	Gly	Gln	Glu	Glu	Leu	Ile
		35					40					45			
Pro	Arg	Ala	Asp	Lys	Gly	Ala	Ile	Leu	Asn	Ala	Arg	Ile	Leu	Trp	Thr
		50				55					60				
Tyr	Ser	Ala	Ala	Tyr	Arg	Leu	Leu	Gly	Arg	Glu	Glu	Tyr	Lys	Glu	Met
65					70					75					80
Ala	Asn	Arg	Ala	Lys	Arg	Tyr	Leu	Ile	Asp	His	Phe	Tyr	Asp	Ser	Glu
				85					90					95	
Phe	Gly	Gly	Val	Tyr	Trp	Ser	Leu	Asn	Tyr	Arg	Gly	Glu	Pro	Leu	Asp
			100					105						110	
Thr	Lys	Lys	Gln	Ile	Tyr	Ala	Ile	Gly	Phe	Ala	Ile	Tyr	Gly	Leu	Ser
		115					120						125		
Glu	Phe	His	Arg	Ala	Thr	Gly	Asp	Pro	Glu	Ala	Leu	Met	Tyr	Ala	Val
		130				135					140				
Arg	Leu	Phe	Asn	Asp	Ile	Glu	Ser	His	Ser	Phe	Asp	Gly	Leu	Lys	Asn
145				150						155					160
Gly	Tyr	Cys	Glu	Ala	Leu	Thr	Arg	Glu	Trp	Asn	Glu	Ile	Ala	Asp	Met
			165					170						175	
Arg	Leu	Ser	Glu	Lys	Asp	Ala	Asn	Glu	Arg	Lys	Thr	Met	Asn	Thr	His
			180					185					190		
Leu	His	Ile	Leu	Glu	Pro	Tyr	Thr	Asn	Leu	Tyr	Arg	Val	Trp	Lys	Asp
		195					200					205			
Ala	Arg	Leu	Glu	Arg	Gln	Leu	Tyr	Asn	Leu	Ile	Gly	Leu	Phe	Thr	Glu
		210				215					220				
Lys	Ile	Leu	Asp	Lys	Asp	Thr	Ser	His	Leu	Gln	Leu	Phe	Phe	Asp	Asn
225					230					235					240
Asp	Trp	Gln	Ser	Lys	Tyr	Pro	Val	Val	Ser	Tyr	Gly	His	Asp	Ile	Glu
			245						250					255	
Ala	Ser	Trp	Leu	Leu	His	Glu	Ala	Ala	Arg	Val	Leu	Gly	Asp	Ala	Gly
			260				265						270		
Leu	Ile	Ala	Glu	Ile	Glu	Pro	Val	Val	Lys	Lys	Ile	Ala	Ala	Ala	Ala
		275					280					285			
Ser	Glu	Gly	Leu	Thr	Ser	Asp	Gly	Gly	Met	Ile	Tyr	Glu	Lys	Asn	Leu
		290				295					300				
Thr	Thr	Gly	His	Ile	Asp	Gly	Asp	Tyr	His	Trp	Trp	Val	Gln	Ala	Glu
305					310					315					320
Thr	Val	Val	Gly	Tyr	Tyr	Asn	Leu	Phe	Arg	Tyr	Phe	Gly	Asp	Arg	Gly
			325						330					335	
Ala	Leu	Gln	His	Ser	Ile	Asp	Cys	Trp	Glu	Phe	Ile	Lys	Arg	His	Leu
			340					345					350		
Thr	Asp	Asp	Val	His	Gly	Glu	Trp	Phe	Trp	Ser	Leu	Arg	Ala	Asp	Gly
		355					360					365			
Ser	Leu	Asn	Arg	Asp	Asp	Asp	Lys	Ala	Gly	Phe	Trp	Lys	Cys	Pro	Tyr
		370				375					380				
His	Asn	Gly	Arg	Met	Cys	Ile	Glu	Leu	Leu	Gly	Glu				
385					390					395					

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<220>
<221> UNSURE
<222> (380)
<223> Identity of amino acid sequences at the above locations are unknown.
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Ile 1	Val	Phe	Gln	Thr 5	Phe	Cys	Thr	Phe	Gly 10	His	Asn	Leu	Pro	Asn 15	Met
Lys	Asn	Lys	His 20	Val	Lys	Arg	Ile	Asn 25	Leu	Leu	Leu	Ser	Ile 30	Leu	Leu
Gly	Ala	Gly 35	Val	Phe	Ile	Phe	Phe 40	Gly	Val	Tyr	Tyr	Ser 45	Tyr	His	Leu
His	Tyr 50	Gln	Glu	Gln	Phe	Gln 55	Met	Phe	Leu	Phe	Thr 60	Ser	Asp	Tyr	Phe
Val 65	Glu	Gln	Val	Ser	His 70	Pro	Gly	Gly	Met	Ala 75	Asp	Tyr	Leu	Gly	Gly 80
Phe	Leu	Thr	Gln 85	Phe	Tyr	Tyr	Tyr	Ser	Trp 90	Ala	Gly	Ala	Ala	Ile 95	Leu
Thr	Gly	Ala	Ile 100	Gly	Gly	Ile	His	Arg 105	Leu	Met	Val	Trp 110	Ile	Ala	Asn
Arg	Leu	Gly 115	Gly	His	Pro	Ala	Trp 120	Tyr	Pro	Leu	Thr	Leu 125	Leu	Pro	Ser
Leu	Cys 130	Phe	Phe	Ile	Leu	Phe 135	Cys	Asp	Glu	Asn	Phe 140	Leu	Leu	Ser	Gly
Ala 145	Ile	Ser	Val	Gly	Met 150	Val	Leu	Gly	Ala	Leu 155	Ile	Gly	Tyr	Thr	Phe 160
Ile	Glu	Asn	Arg 165	Gln	Ile	Arg	Leu	Ile	Tyr 170	Trp	Gly	Val	Gly	Ile 175	Pro
Leu	Leu	Tyr 180	Leu	Leu	Ala	Gly	Gly 185	Cys	Ala	Trp	Leu	Phe 190	Ile	Pro	Leu
Ile	Trp 195	Ile	Thr	Glu	Phe	Cys	Arg 200	Phe	Ala	Gly	Arg	Arg 205	Leu	Pro	Trp
Trp	Ile 210	Leu	Val	Gly	Gly	Thr 215	Leu	Gly	Ile	Ala	Gly 220	Val	Thr	Tyr	Trp
Ile 225	Ser	Leu	Ala	Val	Phe 230	Pro	Tyr	Pro	Ala	Asp 235	Arg	Leu	Leu	Trp	Ala 240
Ile	Gly	Ser	Tyr 245	Arg	Phe	Pro	Leu	Val	Phe 250	Pro	Gln	Met	Gln	Val 255	Ile
Ala	Trp	Leu	Ala 260	Val	Ile	Leu	Val	Pro 265	Leu	Leu	Val	Ala 270	Arg	Leu	Pro
Glu	Lys 275	Met	Thr	Trp	Arg	Tyr	Tyr 280	Ser	Gly	Ala	Trp	Val 285	Leu	Gln	Phe
Ile	Leu 290	Met	Leu	Phe	Val	Leu 295	Asn	Leu	Tyr	Gly	Lys 300	Tyr	Gly	Ile	Gly
Leu 305	Asn	Lys	Glu	Glu	Val 310	Met	Gly	Tyr	Asp	Tyr 315	His	Val	Arg	Met	Gln 320
Glu	Trp	Asp	Glu 325	Val	Ile	Ala	Met	Ala	Glu 330	Lys	Lys	Ala 335	Pro	Asp	Thr
Pro	Met	Ser 340	Val	Ser	Cys	Leu	Asn 345	Leu	Ala	Leu	Ala	Met 350	Lys	Gly	Gln
Leu	Arg 355	Glu	Arg	Met	Phe	Ser	Phe 360	Tyr	Gln	Arg	Gly	Lys 365	Glu	Gly	Leu
Leu	Met 370	Ser	Phe	Val	Asn 375	Asp	Phe	Thr	Ile	Leu	Xaa 380	Val	Ala	Gly	Glu

Pro Tyr Tyr Tyr Leu Gly Leu Val Asn Val Ala Gln Gln Phe Val Phe
 385 390 395 400
 Glu Ala Met Glu Ala Val Pro Asp Tyr Arg Lys Ser Val Arg Cys Phe
 405 410 415
 Lys Arg Leu Ala Glu Thr Asn Leu Ile Asn Gly Arg Tyr Glu Val Ala
 420 425 430
 Arg Lys Tyr Leu Arg Ile Leu Gln His Thr Leu Phe Tyr Lys Asp Trp
 435 440 445
 Ala Thr Glu Thr Leu Ala Cys Leu Asn Asp Glu Asp Arg Val Asn Ala
 450 455 460
 His Pro Glu Tyr Gly Arg Leu Arg Arg Leu Thr Pro Arg Thr Asp Phe
 465 470 475 480
 Phe Phe Asn Pro Asp Leu Pro Glu Met Thr Leu Glu Phe Leu Leu His
 485 490 495
 Ala Asn Pro Arg Asn Arg Met Ala Tyr Glu Tyr Leu Met Ala Cys Thr
 500 505 510
 Leu Leu Lys Lys Asp Val Gly Arg Phe Val His Tyr Tyr Pro Leu Gly
 515 520 525
 Ala Asp Leu Gly Tyr Ser Ser Val Pro Lys Gly Tyr Gln Glu Ala Leu
 530 535 540
 Leu Phe Tyr Trp Leu Met Ser Lys His Thr Ala Thr Asp Thr Ile Pro
 545 550 555 560
 Trp Lys Ile Asp Pro Gln Thr Glu Asn Arg Leu Arg Glu Tyr Ala Gln
 565 570 575
 Ile Phe Thr Ser Ala Arg Ser Ala Asp Ala Leu Ser Ala Arg Phe Gly
 580 585 590
 Asp Thr Tyr Trp Phe Tyr Ala Asp Phe Arg
 595 600

<210> 6003

<211> 258

<212> PRT

<213> B.fragilis

<400> 6003

Ile Tyr Leu Gln Glu Lys Phe His Val Ala Tyr Asn Arg Gly Asn Val
 1 5 10 15
 Met Thr Phe Cys Arg His Tyr Tyr Asn Pro Val Thr Gly Gly Asn Phe
 20 25 30
 Tyr Asp Thr Thr Gln Val Val Arg His Ile Leu Pro Gly Gly Ser Tyr
 35 40 45
 His Ala Thr Phe Lys Ala Asp Leu Lys Ile Ile Ala Asp Phe Ala His
 50 55 60
 Asn Ala Lys Gly Asp Asp Ala Glu Leu Ile Pro Ile Ile Phe Arg Pro
 65 70 75 80
 Trp His Glu Phe Asp Gly Asn Trp Phe Trp Trp Ala Lys Asn His Cys
 85 90 95
 Ser Val Glu Glu Phe Lys Lys Leu Tyr Arg Phe Thr Val Thr Tyr Leu
 100 105 110
 Arg Asp Ser Leu Glu Val His Asn Phe Leu Tyr Ala Phe Ser Pro Asp
 115 120 125
 Cys Gly Phe Thr Thr Glu Ala Glu Tyr Leu Lys Arg Tyr Pro Gly Asp
 130 135 140
 Lys Tyr Val Asp Val Val Gly Met Asp Asn Tyr Trp Asp Phe Arg Pro
 145 150 155 160
 Tyr Gly Gly Asp Thr Ser Leu Val Val Leu Lys Ala Arg Ile Leu Thr
 165 170 175
 Gln Tyr Ala Gln Lys His Gly Asn Leu Ser Ala Ile Thr Glu Ser Gly
 180 185 190

Thr Gln Thr Arg Asp Ser Leu Trp Tyr Thr Gln Leu Leu Ser Ile Leu
 195 200 205
 Arg Ser Glu Gly Val Ala Leu Asn Tyr Val Cys Thr Trp Ser Gly Phe
 210 215 220
 Ser Pro Tyr Lys Gly His Pro Ala Ala Ala Asp Phe Cys Arg Phe Lys
 225 230 235 240
 Arg Asp Thr Leu Val Leu Phe Ala Asp Glu Ile Pro Asn Phe Tyr Thr
 245 250 255
 Trp His

<210> 6004
 <211> 398
 <212> PRT
 <213> B.fragilis

<400> 6004

Ser Thr Gly Gln Ser Cys Trp Pro Gly Ala Leu Pro Val Phe Gln Thr
 1 5 10 15
 Met Asp Arg Tyr Arg Leu Lys Ile Ile Ala Leu Thr Ala Leu Val Cys
 20 25 30
 Leu Thr Gly Ser Ser Cys Thr Asp Glu Asn Asn Gly Gln Gly Asn
 35 40 45
 Asn Ile Ile Tyr Gly Glu Asn Ile Ile Gly Asn Gly Glu Gln Thr Phe
 50 55 60
 Glu Ile Lys Asp His Gln Tyr Leu Lys Arg Gly Thr Tyr Leu Met Lys
 65 70 75 80
 Gly Trp Cys Tyr Val Thr Tyr Gly Ser Thr Leu Thr Ile Glu Ala Gly
 85 90 95
 Thr Val Ile Lys Gly Asp Lys Glu Thr Arg Ala Ala Leu Ile Val Glu
 100 105 110
 Pro Gly Gly Lys Leu Ile Ala Arg Gly Thr Val Asp Ala Pro Ile Val
 115 120 125
 Phe Thr Ser Glu Met Pro Ala Gly Lys Arg Lys Pro Gly Asp Trp Gly
 130 135 140
 Gly Leu Ile Leu Cys Gly Tyr Ala Arg Asn Asn Glu Asp Ile Met Gln
 145 150 155 160
 Ile Glu Gly Gly Pro Arg Thr Met His Gly Gly Pro Asn Asn Ala Asp
 165 170 175
 Asn Ser Gly Val Leu Ser Tyr Val Arg Val Glu Phe Ala Gly Tyr Pro
 180 185 190
 Phe Lys Lys Asn Gln Glu Ile Asn Gly Ile Thr Phe Gly Ser Val Gly
 195 200 205
 Asn Gly Thr Gln Ile Asp His Leu Gln Val Ser Tyr Ala Asn Asp Asp
 210 215 220
 Ala Phe Glu Trp Phe Gly Gly Thr Val His Ala Glu Tyr Leu Val Ala
 225 230 235 240
 Tyr His Cys Trp Asp Asp Asp Phe Asp Ile Asp Asn Gly Tyr Ser Gly
 245 250 255
 Thr Cys Arg His Leu Leu Gly Ile Arg His Pro Arg Ile Ala Asp Ile
 260 265 270
 Thr Gly Ser His Ala Phe Glu Cys Ser Asn Asn Gly Thr Asn Thr Pro
 275 280 285
 Ala Thr Pro Thr Thr Ala Ala Thr Phe Glu Asp Val Thr Ile Tyr Gly
 290 295 300
 Pro Ala Ser Gly Asp Ala Ser Phe Val Asn His Pro Asp Phe Ile Asn
 305 310 315 320
 Gly Gly Gly Leu Arg Pro Glu Asn Glu Ser Met Leu Gly Leu Phe Gly
 325 330 335

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Ala Ala Leu Tyr Met Gly Asn Asn Thr Ser Val Thr Phe Arg Asn Cys
 340 345 350
 Arg Ile Ser Gly Tyr Pro Ser Asp Met Glu Gly Thr Pro Ala Ser Ala
 355 360 365
 Asp Asn Val Val Phe Ser Glu Arg Glu Glu Thr Gly Tyr Pro Glu Trp
 370 375 380
 Thr Gln Gly Trp Cys Asn Phe Asn Pro Gln Glu Thr Glu Tyr
 385 390 395

<210> 6005

<211> 377

<212> PRT

<213> B.fragilis

<400> 6005

Lys Met Ser Lys Asn Met Glu Tyr Arg Lys His Arg Ile Glu Tyr Leu
 1 5 10 15
 Arg Thr Thr Val Glu Tyr Ser Leu Phe Gly Gly Glu Gly Gly Thr Arg
 20 25 30
 Glu Ala His Leu Met Phe His Val Asp Pro Glu Ala Gly Ser Tyr Glu
 35 40 45
 Glu Gln Leu Thr Ala Ile Arg Lys Ala Tyr His Arg Ile Leu Ser Arg
 50 55 60
 Lys Val Lys Ile Arg Gly Met Val Pro Val Phe Cys Arg Tyr Phe Leu
 65 70 75 80
 Ser Asp Ala Ala Asn Gln Trp Glu Ala Leu Gln Ala Val Leu Gln Lys
 85 90 95
 Glu Pro Ser Cys Ala Val Ser Val Val Gln Gln Pro Pro Leu Asp Gly
 100 105 110
 Ser Lys Ile Ala Leu Trp Val Tyr Leu Thr Ser Glu Pro Asn Ala Ala
 115 120 125
 Tyr Lys His Tyr Trp Thr Ala Gly Ala Gly Val Ser Cys Gly Lys Ser
 130 135 140
 Glu Arg Gln Met Lys Thr Leu Leu Lys Ser Tyr Glu Ala Asp Leu Val
 145 150 155 160
 Gly Lys Gly Cys Thr Leu Ala Ser Asp Cys Ile Arg Thr Trp Ile Phe
 165 170 175
 Val Gln Asn Val Asp Val Asn Tyr Ala Gly Ile Val Lys Ala Arg Arg
 180 185 190
 Glu Asn Phe Leu Gly Gln Gly Leu Thr Glu Ser Thr His Tyr Val Ala
 195 200 205
 Ser Thr Gly Ile Glu Gly Arg His Ala Asp Pro Lys Ile His Val Leu
 210 215 220
 Phe Asp Ala Tyr Ala Val Lys Gly Leu Gln Pro Gly Gln Val Thr Tyr
 225 230 235 240
 Leu His Ala Leu Ser His Leu Ser Pro Thr Ala Leu Tyr Gly Val Thr
 245 250 255
 Phe Glu Arg Gly Thr Ser Val Glu Tyr Gly Asp Arg Arg His Leu Phe
 260 265 270
 Ile Ser Gly Thr Ala Ser Ile Asp His Arg Gly Glu Val Val His Val
 275 280 285
 Gly Asp Val Arg Glu Gln Thr Arg Arg Met Trp Glu Asn Val Glu Lys
 290 295 300
 Leu Leu Glu Glu Gly Lys Ala Gly Phe Glu Asp Val Ala Gln Met Ile
 305 310 315 320
 Val Tyr Leu Arg Asp Ala Ser Asp Tyr Pro Val Val Arg Ala Leu Phe
 325 330 335
 Ala Lys Arg Phe Pro Asp Thr Pro Ile Gln Phe Val Val Ala Ala Val
 340 345 350

Cys Arg Pro Ala Trp Leu Ile Glu Met Glu Cys Ile Ala Ile Val Ala
 355 360 365
 Asn Ser Asn Ser Ser Tyr Glu Ser Phe
 370 375

<210> 6006
 <211> 398
 <212> PRT
 <213> B.fragilis

<400> 6006

Ile Thr Ile Lys Thr Leu Ser Ile Met Ser Leu Phe Asn Asp Lys Val
 1 5 10 15
 Ala Lys Leu Leu Ala Gly His Glu Ala Leu Leu Met Arg Lys Asn Glu
 20 25 30
 Pro Val Glu Glu Gly Asn Gly Val Ile Thr Arg Tyr Arg Tyr Pro Val
 35 40 45
 Leu Thr Ala Ala His Thr Pro Val Phe Trp Arg Tyr Asp Leu Asn Glu
 50 55 60
 Glu Thr Asn Pro Phe Leu Met Glu Arg Ile Gly Met Asn Ala Thr Leu
 65 70 75 80
 Asn Ala Gly Ala Ile Lys Trp Asp Gly Lys Tyr Leu Met Leu Val Arg
 85 90 95
 Val Glu Gly Ala Asp Arg Lys Ser Phe Phe Ala Val Ala Glu Ser Pro
 100 105 110
 Asn Gly Ile Asp Asn Phe Arg Phe Trp Glu Tyr Pro Val Thr Leu Pro
 115 120 125
 Glu Asp Val Val Pro Ala Thr Asn Val Tyr Asp Met Arg Leu Thr Ala
 130 135 140
 His Glu Asp Gly Trp Ile Tyr Gly Ile Phe Cys Ala Glu Arg His Asp
 145 150 155 160
 Asp Asn Ala Pro Ile Gly Asp Leu Ser Ser Ala Thr Ala Thr Ala Gly
 165 170 175
 Ile Ala Arg Thr Lys Asp Leu Lys Asn Trp Glu Arg Leu Pro Asp Leu
 180 185 190
 Lys Thr Lys Ser Gln Gln Arg Asn Val Val Leu His Pro Glu Phe Val
 195 200 205
 Asp Gly Lys Tyr Ala Leu Tyr Thr Arg Pro Gln Asp Gly Phe Ile Asp
 210 215 220
 Thr Gly Ser Gly Gly Gly Ile Gly Trp Ala Leu Ile Asp Asp Ile Thr
 225 230 235 240
 His Ala Glu Val Gly Glu Glu Lys Ile Ile Asp Lys Arg Tyr Tyr His
 245 250 255
 Thr Ile Lys Glu Val Lys Asn Gly Glu Gly Pro His Pro Ile Lys Thr
 260 265 270
 Pro Gln Gly Trp Leu His Leu Ala His Gly Val Arg Asn Cys Ala Ala
 275 280 285
 Gly Leu Arg Tyr Val Leu Tyr Met Tyr Met Thr Ser Leu Asp Asp Pro
 290 295 300
 Thr Arg Leu Ile Ala Ser Pro Ala Gly Tyr Phe Met Ala Pro Val Gly
 305 310 315 320
 Glu Glu Arg Ile Gly Asp Val Ser Asn Val Leu Phe Ser Asn Gly Trp
 325 330 335
 Ile Ala Asp Asp Asp Gly Lys Val Phe Ile Tyr Tyr Ala Ser Ser Asp
 340 345 350
 Thr Arg Met His Val Ala Thr Ser Thr Ile Glu Arg Leu Val Asp Tyr
 355 360 365
 Cys Leu His Thr Pro Gln Asp Gly Phe Ser Ser Ser Ala Ser Val Glu
 370 375 380

Ile Leu Lys Asn Leu Ile Glu Arg Asn Leu Arg Leu Met Lys
 385 390 395

<210> 6007
 <211> 140
 <212> PRT
 <213> B.fragilis

<400> 6007

Gly	Ile	Lys	Asn	His	Ser	Asn	Arg	Leu	Leu	Met	Lys	Arg	Ile	Gly	Ile
1				5					10					15	
Tyr	Ile	Val	Ile	Val	Val	Cys	Ile	Leu	Ser	Cys	Ile	Ser	Ser	Arg	Arg
			20					25					30		
Asn	Leu	Leu	Thr	Glu	Thr	Arg	Leu	Met	Leu	Val	Asp	Thr	Arg	Ala	Thr
			35				40					45			
Glu	His	Thr	Ala	Ala	Leu	Phe	Tyr	Asn	Leu	Arg	Gln	Leu	Thr	Gly	Lys
			50			55					60				
Arg	Val	Val	Tyr	Gly	Gln	His	Asn	Tyr	Glu	Met	Asp	Gly	Phe	Asp	Ser
65					70					75					80
Asp	Ser	Thr	Arg	Trp	Glu	Asp	Glu	Ala	Asn	Arg	Cys	Asp	Ala	Tyr	Asp
				85					90					95	
Val	Thr	Gly	Ala	Tyr	Pro	Ala	Leu	Ala	Ser	Phe	Glu	Phe	Leu	His	Phe
			100					105						110	
Thr	Asn	Pro	Arg	Ser	Trp	Gly	Asn	Lys	Arg	Ile	Glu	Phe	Thr	Tyr	Arg
			115				120					125			
Lys	Asn	Ser	Met	Leu	His	Ile	Ile	Gly	Glu	Met	Leu				
			130			135					140				

<210> 6008
 <211> 160
 <212> PRT
 <213> B.fragilis

<400> 6008

Lys	Met	Lys	Asn	Glu	Glu	Tyr	Thr	Tyr	Leu	Gly	Gly	Leu	Met	Gln	Gly
1				5					10					15	
Ile	Gly	Ser	Leu	Leu	Thr	Gly	Met	Lys	Thr	Thr	Ile	Lys	Val	Tyr	Phe
			20					25					30		
Arg	Lys	Lys	Val	Thr	Glu	Gln	Tyr	Pro	Glu	Asn	Arg	Ala	Glu	Leu	Lys
			35				40					45			
Met	Phe	Asp	Arg	Phe	Arg	Gly	Thr	Leu	Asn	Met	Pro	His	Asn	Glu	Asn
			50			55					60				
Asn	Glu	His	Arg	Cys	Val	Ala	Cys	Gly	Leu	Cys	Gln	Met	Ala	Cys	Pro
65					70					75					80
Asn	Asp	Thr	Ile	Lys	Val	Thr	Ser	Glu	Thr	Ile	Glu	Thr	Glu	Glu	Gly
				85				90					95		
Lys	Lys	Lys	Lys	Ile	Leu	Ala	Lys	Tyr	Glu	Tyr	Asp	Leu	Gly	Ser	Cys
			100				105						110		
Ile	Phe	Cys	Gln	Leu	Cys	Val	Asn	Ala	Cys	Pro	His	Asp	Ala	Ile	Thr
			115				120					125			
Phe	Asp	Gln	Val	Phe	Glu	His	Ala	Val	Phe	Asp	Arg	Thr	Lys	Leu	Val
			130			135					140				
Leu	Gln	Leu	Asn	Arg	Glu	Gly	Ser	Lys	Val	Ile	Glu	Lys	Lys	Lys	Glu
145					150					155					160

<210> 6009
 <211> 1075
 <212> PRT
 <213> B.fragilis

<400> 6009

Asn Lys Arg Lys Met Lys Arg Met Ala Tyr His Leu Leu Ala Ile Leu
 1 5 10 15
 Ile Trp Gly Met Ala Ala Ser Ala Val Lys Ala Gln Ile Leu Leu Thr
 20 25 30
 Ala Ser Ala Thr Pro Ile Glu Glu Tyr Ala Ala Val Glu Leu Gln Arg
 35 40 45
 Tyr Tyr Tyr Gln Leu Ser Gly Arg Leu Leu Ser Ile Asp His Glu Glu
 50 55 60
 Val Pro Asp Arg Lys Thr Glu Phe Val Leu Thr Arg Leu Asp His Pro
 65 70 75 80
 Leu Val Lys Ser Trp Arg Asp Lys Gly Val Leu Pro Leu Lys Ser Met
 85 90 95
 Pro Gly Glu Gln Gly Tyr Val Ile Arg Thr Val Lys Glu Lys Gly Arg
 100 105 110
 Glu Leu Val Val Ile Ala Gly Val Asp Ala Asn Gly Leu Leu Tyr Gly
 115 120 125
 Val Tyr Gly Leu Leu Glu Asp His Leu Gly Met Arg Phe Tyr Met Asn
 130 135 140
 Gly Asp Val Tyr Pro Asp Lys Lys Glu Val Gln Thr Arg Ile Pro Leu
 145 150 155 160
 Ile Gln Asp Glu Arg Thr Pro Thr Val Ala Ile Arg Gly Phe Leu Pro
 165 170 175
 Trp Thr Asn Phe Pro Gln Ser Ala Thr Ile Tyr Ser Trp Asp Asp Trp
 180 185 190
 Arg Tyr Ile Ile Asp Gln Ala Ala Arg Met Arg Met Asn Phe Ile Met
 195 200 205
 Ile His Asn Tyr Asn Gly Phe Cys Gly His Asn Glu Leu Phe His Asn
 210 215 220
 Phe Glu Tyr Lys Gly His Leu Ser Arg Gly Trp Met Pro Thr Ile Lys
 225 230 235 240
 Thr Gly His Gly Trp Gly Cys Pro Gly Trp Asn Ile Asn Glu Tyr Leu
 245 250 255
 Phe Gly Ala Ser Glu Val Tyr Asp Asp Tyr Asp Phe Gly Ala Asp Tyr
 260 265 270
 Gly Leu His Asn Glu Thr Leu Thr Asn Gly Gln Ile Lys Glu Lys Gly
 275 280 285
 Ala Thr Ile Phe Arg Lys Val Ile Ala Tyr Ala His Leu Arg Gly Val
 290 295 300
 Lys Ile Gly Leu Gly Leu Asp Ile Asp Val Val Leu Pro Glu Tyr Gln
 305 310 315 320
 Ser Glu Pro Asp Asn Lys Asp Leu Ile Lys Val Gln Val Ala Glu Ile
 325 330 335
 Ala Arg Glu Tyr Pro Glu Leu Asp Tyr Leu Leu Cys Phe Gln Ser Glu
 340 345 350
 Gly Gln Lys Asn Glu Ala Phe Tyr Ala Arg Trp Arg Arg Val Phe Asp
 355 360 365
 Gly Phe Tyr Glu Glu Met Lys Arg Lys Ser Pro Ser Thr His Ile Ala
 370 375 380
 Val Ser Gly Trp Gly Leu Thr Ala Glu Ser Val Asn Ser Leu Pro Glu
 385 390 395 400
 Asp Val Ile Cys Ala Pro Ile Ser Tyr Tyr Ser Ala Ala Phe Glu Pro
 405 410 415
 Gly Ser Val Tyr Gly Asn Arg Glu Tyr Trp Gly Cys Pro Trp Leu Glu
 420 425 430
 Arg Asp Phe Asn Ser Ser Glu Tyr Tyr Tyr Pro Tyr Asn Val Asp Leu
 435 440 445
 Ser Glu Thr Ile Arg Ala Phe Gly Asp Ala Ser Ala Asn Met Asn Gly

450 455 460
 Phe Tyr Ala Leu Thr Trp Arg Leu Ala Asp Ala Ile Ser Pro Lys Met
 465 470 475 480
 Trp Tyr Ile Ser Lys Ala Pro Trp Tyr Asn His Glu Val Leu Asp Ser
 485 490 495
 Ser Glu Lys Val Tyr Arg Asp Phe Ala Leu Ala Asn Tyr Gly Glu Asn
 500 505 510
 Ala Val Asp Ala Ile Thr Asp Ile Ile Asp Gln Asn Glu Pro Phe Ala
 515 520 525
 Thr Asp Phe Gly Glu Cys Gln Glu Thr Pro Gly Phe Asn Gln Met Val
 530 535 540
 His Thr Tyr Pro Leu Met Asn Leu Tyr Ser Met Thr Phe Gly Gly Lys
 545 550 555 560
 Asn Gly Lys Asp Val Glu Ile Lys Ala Thr Val Tyr Ala Glu Lys Lys
 565 570 575
 Gly Thr Lys Asn Ala Pro Cys Asp Glu Gly Gly Glu Cys Val Gly Tyr
 580 585 590
 Ile Met Ala Asp Asp Trp Leu Gln Tyr Pro Ala Val Asp Phe Ser Asn
 595 600 605
 Ser Pro Glu Arg Met Ser Ile Arg Ile Ala Ser Ala Ser Ser Gly Gly
 610 615 620
 Val Ala Thr Val Tyr Leu Asp Arg Leu Gly Gly Pro Val Ile Ala Arg
 625 630 635 640
 Phe Glu Val Lys Asn Thr Glu Gly Trp Gln Ser Trp Lys Ser Leu Thr
 645 650 655
 Val Pro Val Lys Gly Leu Lys Gly Val His Thr Leu Tyr Val Arg Phe
 660 665 670
 Gln Pro Phe Asn Val Ile Ala Lys Ala Gly Lys Leu Ala Asp Lys Gln
 675 680 685
 Leu Lys Thr Ile Asp Ser Cys Met Ala Val Thr Ser Asp Val Leu Gln
 690 695 700
 Gln Leu Arg Leu Ser Arg Leu Arg Ala Arg Ile Gln Gly Ala Ala Cys
 705 710 715 720
 His Ile Ala Leu Asn Thr Asp Phe Glu Asn Tyr Gln Trp Asn Asp Leu
 725 730 735
 Pro Gly Lys Met Asp Glu Trp Ala Arg Ser Phe Leu Tyr Arg Ile Glu
 740 745 750
 Asp Ile Ser Ser Tyr Gly Asn Ile Met Ser Thr Gln Asn Arg Phe Val
 755 760 765
 Lys Gln Asn Tyr Val Glu Lys Ile Asn Gln Leu Arg Lys Gln Gln Arg
 770 775 780
 Val Gln Ala Pro Ser His Ile Ile Ala Lys Gly Thr Leu Glu Gly Ala
 785 790 795 800
 Gln Ile Ser Trp Arg Asn Glu Glu Pro Ala Val Ser Ser Phe Val Val
 805 810 815
 Cys Arg Asn Gly Glu Glu Ile Asp Thr Leu Ala Ser Asp Val Asn Cys
 820 825 830
 Tyr Gln Asp Lys Phe His Gly Ala Ala Ser Tyr Thr Val Tyr Ala Val
 835 840 845
 Asp Ile Glu Gly His Lys Ser Pro Leu Gly Ile Pro Ala Asp Cys Leu
 850 855 860
 Ala Gly Ser Ala Asp Arg Glu Ala Pro Val Ile Val Ile Asn Ser Pro
 865 870 875 880
 Leu Thr Ser Ile Met Glu Gly Thr Pro Leu His Ile Arg Phe Ser Val
 885 890 895
 Val Glu Asn Arg Leu Pro Glu Phe Val Ser Gly Ile Phe His Tyr Arg
 900 905 910
 Arg Thr Gly Glu Lys Val Trp Lys Lys Ile Pro Phe Lys His Arg Thr
 915 920 925

Arg Gly Val Phe Thr Leu Thr Leu Pro Ala Ser Glu Ile Thr Arg Gln
 930 935 940
 Gly Ile Glu Tyr Tyr Ile Ser Val Ser Asp Ser Asp Asn Val Phe Cys
 945 950 955 960
 Tyr Pro Gly Ser Ala Pro Ala Arg Asn His Thr Val Val Val Thr Glu
 965 970 975
 Val Pro Gly Asp Asp Lys Pro Glu Val Pro Met Ile Lys Pro Ile Cys
 980 985 990
 Gly Lys Arg Met Phe Trp Ser Arg Val Pro Asn Val Glu Met Tyr Arg
 995 1000 1005
 Ile Tyr Arg Ser Arg Thr Pro Asp Phe Lys Ile Gly Ala Asp Thr Phe
 1010 1015 1020
 Val Thr Phe Val Ala Gly Asn Thr Gln Ser Phe Ala Asp Asn Gly Phe
 1025 1030 1035 1040
 Asp Phe Asp Gly Thr Ser Leu Lys Gly Thr Tyr Tyr Tyr Cys Val Thr
 1045 1050 1055
 Ser Val Ser Phe Trp Asp His Glu Ser Glu Ala Ser Lys Ile Ile Gln
 1060 1065 1070
 Ile Asp Tyr
 1075

<210> 6010

<211> 426

<212> PRT

<213> B.fragilis

<400> 6010

Asn Ser Met Asn Met Lys Thr Asn Tyr Leu Lys Leu Asn Ser Trp Ala
 1 5 10 15
 Val Ala Ala Leu Met Gly Met Cys Ser Leu Ala Ala Cys Ser Asp Asp
 20 25 30
 Asn Ser Gly Glu Gly Gly Gly Asn Gly Asp Ser Glu Glu Val Ile Ala
 35 40 45
 Asn Asn Gly Thr Leu Lys Gly Ser Val Asp Gly Ser Lys Thr Val Ile
 50 55 60
 Leu Thr Lys Gly Tyr Asn Phe Ser Leu Asp Gly Glu Tyr Ile Val Lys
 65 70 75 80
 Ala Gly Ser Thr Leu Lys Ile Gly Glu Gly Val Thr Ile Ser Ala Lys
 85 90 95
 Ser Asp Asp Ala Thr Ile Asp Tyr Ile Leu Val Glu Gln Gly Ala Lys
 100 105 110
 Ile Glu Ala Val Gly Thr Ala Ser Ala Pro Ile Val Met Thr Ala Asp
 115 120 125
 Thr Lys Glu Pro Gly Ala Trp Gly Gly Ile His Ile Cys Gly Lys Ala
 130 135 140
 Pro Ile Asn Ile Gly Ser Thr Gly Lys Ser Glu Val Gly Asp Ala Ala
 145 150 155 160
 Tyr Gly Gly Ser Asp Pro Ala Asp Asn Ser Gly Ile Leu Lys Tyr Ile
 165 170 175
 Arg Leu Glu Tyr Ala Gly Tyr Lys Phe Thr Thr Glu Lys Glu Cys Asn
 180 185 190
 Gly Phe Thr Phe Tyr Gly Val Gly Asn Gly Thr Thr Leu Glu Tyr Leu
 195 200 205
 Glu Ala Tyr Lys Gly Thr Asp Gly Phe Glu Trp Phe Gly Gly Thr
 210 215 220
 Val Asn Ala Lys Tyr Leu Val Ser Val Ser Asn Ser Asp Asp Ser Phe
 225 230 235 240
 Asp Trp Thr Glu Gly Trp Ser Gly Lys Gly Gln Phe Phe Val Ala Tyr
 245 250 255

Gln Glu Asp Pro Ala Thr Leu Gly Tyr Thr Cys Asp Cys Leu Ile Glu
 260 265 270
 Ala Asp Asn Tyr Asp Lys Asn Met Asp Ala Ala Pro Ile Ser Cys Pro
 275 280 285
 Thr Leu Ala Asn Leu Thr Leu Ile Gly Ala Asn Asn Asp Glu Gly Lys
 290 295 300
 Arg Gly Ile Arg Leu Arg Ala Gly Thr Gln Ala Lys Ile Tyr Asn Ala
 305 310 315 320
 Leu Val Thr Gly Lys Ala Asn Asn Leu Thr Thr Glu Thr Glu Gln Thr
 325 330 335
 Glu Lys Phe Leu Ile Asp Gly Pro Ser Val Leu Asn Tyr Ile Ala Ile
 340 345 350
 Ala Arg Asp Ile Lys Ala Ser Gly Asp Gly Gly Tyr Ser Ser Ala Leu
 355 360 365
 Phe Thr Ala Glu Gly Asn His Asn Ala Ile Asn Gln Thr Leu Ser Phe
 370 375 380
 Ser Asn Ile Phe Ile Gly Thr Gln Asp Gly Gly Ala Asp Leu Ser Ala
 385 390 395 400
 Asp Ser Phe Phe Glu Lys Ala Ala Tyr Lys Gly Ala Val Lys Ala Asp
 405 410 415
 Asn Glu Trp Thr Lys Gly Trp Thr Lys Leu
 420 425

<210> 6011
 <211> 405
 <212> PRT
 <213> B.fragilis

<400> 6011
 Ile Ile Met Asn Arg Ile Asn Thr Thr Leu Leu Leu Leu Phe Cys Ser
 1 5 10 15
 Val Tyr Cys Leu Ala Gln Gln Ala Thr Ile Pro Val Pro Lys Pro Phe
 20 25 30
 Gln Leu Lys Trp His Gln Ala Glu Met Gly Ala Val Phe His Tyr Asp
 35 40 45
 Leu His Val Phe Asp Gly Val Arg Tyr Gly Gln Gly Asn Asn Arg Ile
 50 55 60
 Asn Pro Ile Glu Asp Tyr Asn Ile Phe Asn Pro Thr Glu Leu Asn Thr
 65 70 75 80
 Asp Gln Trp Val Leu Ala Ala Lys Ala Ala Gly Cys Lys Phe Ala Val
 85 90 95
 Leu Thr Ala Thr His Glu Thr Gly Phe Gly Leu Trp Gln Ser Asp Val
 100 105 110
 Asn Pro Tyr Cys Leu Lys Ala Val Lys Trp Arg Asp Gly Lys Gly Asp
 115 120 125
 Ile Val Arg Asp Phe Val Asn Ser Cys Arg Lys Tyr Gly Leu Gln Pro
 130 135 140
 Gly Ile Tyr Ile Gly Ile Arg Trp Asn Ser Leu Leu Gly Ile His Asn
 145 150 155 160
 Phe Lys Ala Glu Gly Glu Gly Glu Phe Ala His Asn Arg Gln Ala Trp
 165 170 175
 Tyr Lys Arg Leu Cys Glu Lys Met Val Thr Glu Leu Cys Thr Arg Tyr
 180 185 190
 Gly Asp Leu Tyr Met Ile Trp Phe Asp Gly Gly Ala Asp Asp Pro Arg
 195 200 205
 Gly Asp Gly Pro Asp Val Glu Pro Ile Val Asn Lys Tyr Gln Pro Asn
 210 215 220
 Cys Leu Phe Tyr His Asn Ile Asp Arg Ala Asp Phe Arg Trp Gly Gly
 225 230 235 240

Ser Glu Thr Gly Thr Val Gly Tyr Pro Cys Trp Ser Thr Phe Pro Ala
 245 250 255
 Pro Cys Ser His His Lys Arg Ile Glu Ser Asn Val Asp Gln Ile Glu
 260 265 270
 Leu Leu Lys His Gly Asp Lys Asp Gly Lys Tyr Trp Val Pro Ala Met
 275 280 285
 Ala Asp Thr Pro Leu Arg Gly Ala Asn Gly Arg His Glu Trp Phe Trp
 290 295 300
 Glu Pro Asp Asp Glu Asn Asn Ile Tyr Pro Leu Asn Glu Leu Met Asp
 305 310 315 320
 Lys Tyr Glu Lys Ser Val Gly Arg Asn Ala Thr Leu Ile Leu Gly Leu
 325 330 335
 Thr Pro Asp Pro Asn Gly Leu Ile Pro Thr Gly Asp Glu Gln Arg Leu
 340 345 350
 Lys Glu Phe Gly Thr Glu Ile Asn Arg Arg Phe Ser Ser Pro Leu Ala
 355 360 365
 Gln Ile Ser Gly Gln Glu Lys Lys Cys Asp Leu Glu Thr Gly Gln Lys
 370 375 380
 Ala Thr Gly Glu Leu Leu Arg His Ser Arg Arg His Thr Glu Arg Arg
 385 390 395 400
 Thr Tyr Pro Pro Ile
 405

<210> 6012
 <211> 901
 <212> PRT
 <213> B.fragilis

<400> 6012
 Lys Asp Met Lys Gln Gln Ile Gly Arg Leu Leu Ser Thr Leu Leu Leu
 1 5 10 15
 Ala Thr Phe Ser Leu Gly Ile Thr Ala Gly Val Ile Gln Gly Thr Ile
 20 25 30
 Ile Asp Lys Gln Thr Lys Glu Pro Leu Thr Gly Ala Thr Val Gln Ile
 35 40 45
 Ala Gly Thr Thr Thr Gly Thr Val Ala Asp Val Asp Gly Asn Tyr Thr
 50 55 60
 Leu Thr Leu Ser Asn Gly Thr Tyr Thr Ile Glu Val Lys Tyr Ile Gly
 65 70 75 80
 Tyr Lys Thr Leu Arg Met Asn Glu Val Lys Val Lys Ala Asn Ala Thr
 85 90 95
 Leu Asn Phe Glu Leu Glu Val Asp Ala Gln Thr Leu Asp Ala Val Thr
 100 105 110
 Val Val Ala Arg Lys Asn Leu Glu Gly Glu Lys Ala Leu Leu Gln Glu
 115 120 125
 Arg Gln Lys Ala Thr Leu Ala Ile Glu Asn Met Gly Ala Lys Glu Met
 130 135 140
 Thr Leu Lys Gly Ile Ser Asn Val Gln Asp Gly Val Lys Lys Ile Thr
 145 150 155 160
 Gly Ile Ser Ile Ala Ser Ala Gly Gln Leu Ile Val Arg Gly Leu Gly
 165 170 175
 Asp Arg Tyr Ser Thr Thr Thr Leu Asn Gly Leu Pro Ile Ala Ser Pro
 180 185 190
 Asn Pro Asp Asn Lys Leu Ile Pro Leu Asp Leu Phe Pro Ala Ser Thr
 195 200 205
 Val Lys Asn Ile Thr Val Ser Lys Val Tyr Ala Ala Gly Ala Phe Ala
 210 215 220
 Asp Tyr Ser Gly Ala His Ile Asp Ile Ser Thr Lys Glu Asn Thr Gly
 225 230 235 240

Ser Asp Phe Phe Ser Ile Gly Phe Asn Val Gly Gly Arg Phe Asn Thr
 245 250 255
 Val Gly Lys Asp Phe Tyr Tyr Ser Asp Arg Lys Gly Gly Leu Phe Ser
 260 265 270
 Thr Gly Asn Leu Arg Asn Lys Asp Arg Ile Leu Ala Met Gly Lys Ser
 275 280 285
 Glu Phe Arg Asp Tyr Ala Arg Asn Asn Asp Pro Phe Gly Thr Asn Phe
 290 295 300
 Ala Ile Ser Lys His Arg Ser Leu Pro Glu Phe Gly Gly Asn Leu Gly
 305 310 315 320
 Gly Gly Lys Ser Trp Thr Leu Pro Asn Gly Asn Arg Leu Ser Val Leu
 325 330 335
 Ala Ser Val Gly Val Ser Asn Glu Asn Gln Ile Leu Lys Asp Ala Tyr
 340 345 350
 Val Thr Thr Met Thr Ala Gln Gly Thr His Leu Asp Lys Phe Asn Tyr
 355 360 365
 Asp Ser Tyr Ser Ser Ala Leu Lys Ile Ala Gly Leu Gly Asn Ile Gly
 370 375 380
 Tyr Ser Phe Arg Gln Ala Asp His Ile Asn Phe Thr Val Phe Tyr Ala
 385 390 395 400
 Arg Asn Ala Ile Asn Asp Tyr Met Ser Arg Glu Gly Ile Asp Ala Glu
 405 410 415
 Lys Asn Asn Ile Thr Ser Ser Asn Ser Val Phe His Ala Tyr Ser Leu
 420 425 430
 Leu Asn Asn Gln Leu Leu Gly His His Glu Leu Thr Ser Gln Trp Asp
 435 440 445
 Val Asn Trp Ser Ala Ser Tyr Gly Leu Thr Asn Ser Asp Glu Pro Asp
 450 455 460
 Arg Arg Gln Val Val Phe Phe Arg Asn Glu Gly Ser Asp Lys Leu Asn
 465 470 475 480
 Leu Phe Lys Leu Asn Gln Thr Thr Asn Arg Tyr Phe Gly Glu Leu Gln
 485 490 495
 Glu Lys Glu Ile Val Gly Asp Leu Arg Thr Ser Tyr Lys Trp Gly Asp
 500 505 510
 Ala Asn Leu Ile Arg Val Gly Gly Thr Tyr Lys Ser Lys Lys Arg Asp
 515 520 525
 Phe Glu Ser Val Asn Phe Tyr Tyr Asp Ile Asn Ala Leu Asn Ala Asp
 530 535 540
 Val Thr Asn Ile Tyr Asp Thr Asn Gly Tyr Leu Asn Gln Glu Asn Ile
 545 550 555 560
 Ala Asn Gly Thr Ile Lys Ala Asn Ile Asp Ala Gln Pro Arg Tyr Asn
 565 570 575
 Tyr Tyr Ala Gly Met Asp Val Trp Ala Gly Phe Ala Glu Ile Glu Tyr
 580 585 590
 Tyr Pro Met Glu Ser Leu Leu Val Asn Val Gly Leu Arg Tyr Glu Gln
 595 600 605
 Ala Lys Gln Trp Val Arg Tyr Trp Thr Asp Gly Gly Gln Glu Lys Lys
 610 615 620
 Thr Asn Leu Asp Lys Gly Asp Phe Phe Pro Ala Leu Asn Leu Lys Tyr
 625 630 635 640
 Ser Leu Asn Glu Thr Asn Ser Leu Arg Leu Ser Val Ser Arg Thr Val
 645 650 655
 Thr Arg Pro Ser Phe Ile Glu Met Ala Pro Phe Leu Tyr Gln Glu Ser
 660 665 670
 Tyr Gly Ser Ala Tyr Ile Arg Gly Asn Asn Glu Leu Lys Asn Ala Tyr
 675 680 685
 Asn Tyr Asn Ile Asp Leu Arg Tyr Asp Phe Phe Pro Lys Arg Asn Asn
 690 695 700
 Gly Asp Met Phe Ser Val Thr Gly Tyr Phe Lys Lys Leu Lys Ser Pro

705		710		715		720									
Ile	Glu	Gln	Thr	Gln	Glu	Ser	Ser	Gly	Gly	Thr	Val	Ile	Arg	Ser	Phe
				725					730					735	
Arg	Asn	Ala	Glu	Asp	Gly	Ile	Ala	Thr	Gly	Val	Glu	Ile	Glu	Phe	Arg
			740						745					750	
Lys	Glu	Leu	Phe	Lys	Asn	Phe	Arg	Ile	Gly	Ala	Asn	Gly	Ser	Tyr	Met
		755					760					765			
Tyr	Thr	Asn	Val	Val	Leu	Pro	Glu	Gly	Gly	Val	Tyr	Thr	Asp	Ser	Glu
		770				775					780				
Arg	Ala	Leu	Gln	Gly	Ala	Ser	Pro	Phe	Leu	Ile	Asn	Ala	Asp	Leu	Ser
785					790					795					800
Tyr	Thr	Pro	Gln	Leu	Arg	Gly	Glu	Ser	Asp	Leu	Thr	Leu	Ala	Leu	Val
			805						810					815	
Tyr	Asn	Val	Gln	Gly	Pro	Arg	Ile	Glu	Thr	Val	Gly	Ile	Tyr	Gly	Thr
			820					825					830		
Gly	Asn	Ile	Lys	Gln	Gln	Thr	Leu	His	Thr	Met	Asp	Phe	Ile	Ala	Ser
		835					840				845				
Tyr	Ala	Ile	Asn	Lys	His	Leu	Ser	Leu	Arg	Leu	Gln	Met	Lys	Asp	Leu
	850					855				860					
Leu	Asn	Ser	Thr	Ile	Arg	Phe	Lys	Gln	Glu	Leu	Pro	Ala	Thr	Gly	Gln
865					870					875					880
Lys	Val	Glu	Val	Glu	Ser	Phe	Arg	Pro	Gly	Thr	His	Ala	Glu	Ile	Gly
				885					890					895	
Val	Ser	Tyr	Arg	Phe											
			900												

<210> 6013

<211> 239

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (232), (236), (239)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6013

Asp	Lys	Met	Lys	Asn	Asn	Arg	Leu	Ile	Ile	Thr	Leu	Ile	Ala	Leu	Phe
1				5					10					15	
Leu	Leu	Gly	Phe	Gly	Leu	Lys	Ala	Gln	Thr	Ala	Ser	Thr	Glu	Glu	Thr
			20					25					30		
Ala	Ala	Gln	Lys	Glu	Lys	Arg	Met	Glu	Trp	Phe	Ala	Gln	Ala	Lys	Leu
		35					40					45			
Gly	Ile	Phe	Ile	His	Trp	Gly	Ile	Tyr	Ala	Val	Asn	Gly	Val	Ser	Glu
	50					55					60				
Ser	Trp	Ser	Phe	Phe	Asn	Asn	Tyr	Leu	Pro	Tyr	Glu	Glu	Tyr	Met	Ala
65					70					75				80	
Gln	Glu	Lys	Gly	Phe	Thr	Ala	Ser	Ala	Tyr	Asn	Pro	Gln	Glu	Trp	Val
				85					90					95	
Lys	Leu	Ile	Lys	Glu	Ser	Gly	Ala	Arg	Tyr	Thr	Val	Ile	Thr	Thr	Lys
			100					105					110		
His	His	Asp	Gly	Val	Ala	Leu	Trp	Asp	Thr	Lys	Ala	Gly	Asp	Leu	Ser
		115					120					125			
Thr	Val	Lys	Ser	Thr	Pro	Ala	Gly	Arg	Asp	Leu	Ile	Ala	Pro	Phe	Val
						135					140				
Lys	Glu	Val	Arg	Lys	Gln	Gly	Leu	Lys	Leu	Gly	Phe	Tyr	Tyr	Ser	Leu
145					150					155					160
Leu	Asp	Trp	Ser	His	Pro	Asp	Tyr	Pro	Asn	Lys	Thr	Arg	Thr	Glu	Val
				165					170					175	

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Arg Tyr Lys Asn Asp Pro Asp Arg Trp Ala Lys Phe Val Lys Phe Asn
 180 185 190
 Phe Gly Gln Leu Ser Glu Leu Asn Lys Thr Trp Lys Pro Asp Leu Tyr
 195 200 205
 Trp Phe Asp Gly Asp Trp Glu Gln Thr Ala Glu Ala Trp Asp Ser Lys
 210 215 220
 Ser Ser Pro Arg Gly Trp Lys Xaa Ala Arg His Xaa Glu Leu Xaa
 225 230 235

<210> 6014
 <211> 279
 <212> PRT
 <213> B.fragilis

<400> 6014
 Tyr Met Phe Asp Phe Ser Ile Ile Thr Ser Trp Ile His Gln Thr Leu
 1 5 10 15
 Thr Ser Val Met Pro Glu Gly Leu Ala Val Phe Ile Glu Cys Val Val
 20 25 30
 Ile Gly Val Cys Ile Val Ala Leu Tyr Ala Ile Leu Ala Ile Leu Leu
 35 40 45
 Ile Tyr Met Glu Arg Lys Val Cys Gly Phe Phe Gln Cys Arg Leu Gly
 50 55 60
 Pro Asn Arg Val Gly Lys Trp Gly Ser Ile Gln Val Leu Cys Asp Val
 65 70 75 80
 Leu Lys Met Leu Thr Lys Glu Ile Ile Glu Leu Lys His Ser Asp Lys
 85 90 95
 Phe Leu Tyr Asn Leu Ala Pro Phe Met Val Ile Ile Ala Ser Phe Leu
 100 105 110
 Thr Phe Ser Cys Leu Pro Ile Ser Lys Gly Leu Glu Val Leu Asp Phe
 115 120 125
 Asn Val Gly Val Phe Phe Leu Leu Ala Ala Ser Ser Ile Gly Val Val
 130 135 140
 Gly Ile Leu Leu Ala Gly Trp Gly Ser Asn Asn Lys Phe Ser Leu Ile
 145 150 155 160
 Gly Ala Met Arg Ser Gly Ala Gln Ile Ile Ser Tyr Glu Leu Ser Val
 165 170 175
 Gly Leu Ser Ile Leu Thr Met Val Val Leu Met Gly Thr Met Gln Val
 180 185 190
 Ser Glu Ile Val Glu Ser Gln Ala Asn Gly Trp Phe Ile Phe Lys Gly
 195 200 205
 His Ile Pro Ala Leu Ile Ala Phe Val Ile Tyr Leu Ile Ala Gly Asn
 210 215 220
 Ala Glu Cys Asn Arg Gly Pro Phe Asp Leu Pro Glu Ala Glu Ser Glu
 225 230 235 240
 Leu Thr Ala Gly Tyr His Thr Glu Tyr Ser Gly Met His Phe Gly Phe
 245 250 255
 Phe Tyr Leu Ala Glu Tyr Leu Asn Met Phe Ile Val Ala Ala Val Ala
 260 265 270
 Ala Thr Ile Phe Leu Gly Gly
 275

<210> 6015
 <211> 836
 <212> PRT
 <213> B.fragilis

<400> 6015
 Pro Arg Ile Asp Asn Tyr Glu Tyr Leu Leu Pro Lys Asn Lys Glu Phe

1		5		10		15									
Phe	Gln	Lys	Leu	Gly	Val	Asp	Ser	Leu	Ile	Tyr	Pro	Glu	Met	Leu	Ala
		20						25					30		
Ala	Lys	Glu	Ile	Val	Ser	Ser	Met	Arg	Met	Ser	Trp	Val	Arg	Gln	Trp
		35					40						45		
Trp	Glu	Phe	Cys	Gly	Gly	Ser	Leu	Ile	Leu	Ile	Gly	Thr	Lys	Met	Arg
	50					55					60				
Glu	Lys	Ala	Glu	Ile	Leu	Asn	Val	Thr	Leu	Ala	Glu	Leu	Gly	Ala	Pro
65				70					75						80
Asp	Ile	Pro	Tyr	His	Val	Val	Ala	Ile	Lys	Arg	Gly	Thr	Glu	Thr	Ile
			85						90					95	
Ile	Pro	Arg	Gly	Asp	Asp	Thr	Ile	Lys	Leu	His	Asp	Ile	Val	Tyr	Phe
			100					105					110		
Thr	Thr	Thr	Arg	Lys	Tyr	Ile	Pro	Tyr	Ile	Arg	Lys	Ile	Ala	Gly	Lys
		115					120					125			
Glu	Glu	Tyr	Ala	Asp	Val	Arg	Asn	Val	Met	Ile	Met	Gly	Gly	Ser	Arg
	130					135					140				
Ile	Ala	Val	Arg	Thr	Ala	Gln	Tyr	Val	Pro	Asp	Tyr	Met	Gln	Val	Lys
145				150					155						160
Ile	Val	Asp	Asn	Asp	Ile	Asn	Arg	Cys	Asn	Arg	Leu	Thr	Glu	Leu	Leu
			165					170						175	
Asp	Asp	Lys	Thr	Met	Ile	Ile	Asn	Gly	Asp	Gly	Arg	Asp	Met	Asp	Leu
			180					185					190		
Leu	Ile	Glu	Gly	Leu	Lys	Asn	Thr	Glu	Ala	Phe	Val	Ala	Leu	Thr	
		195				200					205				
Gly	Asn	Ser	Glu	Thr	Asn	Ile	Leu	Ala	Cys	Leu	Ala	Ala	Lys	Arg	Met
	210				215						220				
Gly	Val	Ser	Lys	Thr	Val	Ala	Glu	Val	Glu	Asn	Ile	Asp	Tyr	Ile	Gly
225				230					235						240
Met	Ala	Glu	Ser	Leu	Asp	Ile	Gly	Thr	Val	Ile	Asn	Lys	Lys	Met	Ile
			245					250						255	
Ala	Ala	Ser	His	Ile	Tyr	Gln	Met	Met	Leu	Asp	Ala	Asp	Val	Ser	Asn
			260					265					270		
Val	Lys	Cys	Leu	Thr	Phe	Ala	Asn	Ala	Asp	Val	Ala	Glu	Phe	Thr	Val
		275					280					285			
Pro	Glu	Asn	Ala	Lys	Ile	Thr	Lys	Asn	Lys	Val	Lys	Asp	Leu	Gly	Leu
	290					295					300				
Pro	Lys	Gly	Thr	Thr	Ile	Gly	Gly	Leu	Ile	Arg	Asn	Gly	Glu	Gly	Ile
305				310						315					320
Leu	Val	Thr	Gly	Asp	Thr	Leu	Ile	Gln	Ala	Gly	Asp	His	Val	Val	Leu
			325					330						335	
Phe	Cys	Leu	Ser	Met	Met	Ile	Lys	Lys	Ile	Glu	Lys	Ser	Leu	Ile	Asp
		340						345					350		
Gly	Met	Ile	Asn	Ser	Lys	Met	Ile	Tyr	Arg	Ile	Thr	Gly	Phe	Leu	Leu
	355					360					365				
Leu	Ile	Glu	Thr	Gly	Leu	Leu	Leu	Cys	Cys	Ala	Gly	Val	Ser	Leu	Ile
	370					375					380				
Tyr	Arg	Glu	Asp	Asp	Leu	Ser	Ser	Phe	Leu	Leu	Ser	Ala	Gly	Leu	Thr
385				390					395						400
Thr	Leu	Val	Ala	Ile	Leu	Leu	Leu	Ala	Leu	Gly	Lys	Gly	Ala	Glu	Lys
			405					410						415	
Gln	Leu	Asn	Arg	Arg	Asp	Gly	Tyr	Val	Ile	Val	Ser	Val	Ala	Trp	Val
		420						425					430		
Val	Phe	Ser	Leu	Phe	Gly	Met	Leu	Pro	Phe	Tyr	Leu	Ser	His	Tyr	Ile
	435					440					445				
Pro	Ser	Ile	Thr	Asn	Ala	Phe	Phe	Glu	Thr	Met	Ser	Gly	Phe	Ser	Ser
	450				455					460					
Thr	Gly	Ala	Thr	Ile	Leu	Asp	Asp	Ile	Glu	Ala	Leu	Pro	His	Gly	Leu
465				470					475						480

Leu Phe Trp Arg Ser Met Thr Gln Trp Ile Gly Gly Leu Gly Ile Val
 485 490 495
 Phe Phe Thr Ile Ala Val Leu Pro Ile Phe Gly Val Ser Gly Val Gln
 500 505 510
 Leu Phe Ala Ala Glu Ala Ser Gly Pro Thr Tyr Asp Lys Val His Pro
 515 520 525
 Arg Ile Gly Val Thr Ala Lys Trp Ile Trp Thr Ile Tyr Ala Gly Leu
 530 535 540
 Thr Ala Ile Glu Val Ile Leu Leu Leu Phe Gly Gly Met Gly Leu Phe
 545 550 555 560
 Asp Ser Ile Cys His Ser Phe Ala Thr Thr Gly Thr Gly Gly Tyr Ser
 565 570 575
 Thr Lys Gln Asp Ser Ile Ala Tyr Tyr Asn Ser Pro Tyr Ile Glu Tyr
 580 585 590
 Val Ile Gly Val Phe Met Phe Leu Ser Gly Ile Asn Phe Thr Leu Leu
 595 600 605
 Leu Leu Leu Phe Thr Gly Lys Leu Lys Lys Val Ser Gln Asn Ala Glu
 610 615 620
 Leu Lys Trp Tyr Val Met Ser Val Ile Leu Phe Thr Ala Phe Ile Ala
 625 630 635 640
 Ala Val Leu Tyr Arg Thr Thr Pro Met Gly Ala Glu Glu Ser Phe Arg
 645 650 655
 Lys Ala Phe Phe Gln Val Ala Ser Leu His Thr Ser Thr Gly Phe Val
 660 665 670
 Thr Ala Asp Tyr Met Gln Trp Val Pro Val Leu Trp Gly Thr Leu Thr
 675 680 685
 Val Ile Met Leu Ile Gly Ala Cys Ala Gly Ser Thr Thr Gly Gly Met
 690 695 700
 Lys Cys Ile Arg Met Val Ile Leu Ala Lys Val Ser Arg Asn Glu Phe
 705 710 715 720
 Lys His Ile Val His Pro Asn Ala Val Leu Pro Val Arg Val Asn Lys
 725 730 735
 Gln Val Ile Ser Pro Ala Ile Leu Ser Thr Val Leu Ala Phe Ser Phe
 740 745 750
 Ile Tyr Ala Val Ile Ile Ile Val Ser Val Leu Leu Met Leu Ala Met
 755 760 765
 Gly Val Gly Phe Thr Glu Ser Ile Gly Thr Val Ile Ser Ser Ile Gly
 770 775 780
 Asn Met Gly Pro Gly Leu Gly Ser Cys Gly Pro Ala Tyr Ser Trp Asp
 785 790 795 800
 Gly Leu Pro Asp Leu Ala Lys Trp Leu Leu Ser Phe Leu Met Leu Leu
 805 810 815
 Gly Arg Leu Glu Leu Phe Thr Val Leu Leu Leu Phe Ser Ser Asp Phe
 820 825 830
 Trp Lys Arg Asn
 835

<210> 6016

<211> 625

<212> PRT

<213> B.fragilis

<400> 6016

Cys Arg Val Glu Leu Val Lys Glu Gly Ser Phe Tyr Gly Thr Ile Pro
 1 5 10 15
 Leu Phe Asn Ser Ala Cys Asn Ile Asn Leu Thr Lys Met Ile Met Arg
 20 25 30
 Lys Ile Gln Tyr Leu Phe Ile Ala Leu Phe Ile Cys Leu Glu Ile Gln
 35 40 45

Ala	Gln	Asp	Lys	Phe	Asn	Ile	Arg	Gly	Val	Leu	Pro	Trp	His	Asn	Phe
50						55					60				
Leu	Ser	Gly	Pro	Thr	Ser	Trp	Asn	Leu	Ser	Asp	Tyr	Arg	Ile	Tyr	Leu
65						70					75				80
Asp	Glu	Cys	Arg	Lys	Asn	Gly	Ile	Asn	Phe	Ile	Gly	Phe	His	Asn	Tyr
				85						90				95	
Thr	Gly	Gly	Gly	Glu	Arg	Tyr	Ala	Thr	Tyr	Val	Glu	Pro	Met	Ile	Lys
			100						105					110	
Ile	Glu	Tyr	Lys	Asn	Ile	Leu	Pro	Gln	Ala	Cys	Phe	Asp	Asn	Ser	Met
		115						120					125		
Thr	Ala	Arg	Trp	Gly	Tyr	Leu	Pro	Met	Ala	Val	Lys	Asp	Phe	Ala	Phe
	130					135						140			
Asp	Thr	Gly	Lys	Ile	Phe	Gln	Leu	Pro	Val	Gly	Ala	Glu	Ala	Phe	Gly
145						150					155				160
Asn	Asn	Gly	Ser	Ile	Thr	Ser	His	Ser	Ser	Arg	Glu	His	Tyr	Glu	Lys
				165						170					175
Ala	Gln	Ser	Leu	Met	Arg	Asp	Val	Leu	Lys	Met	Ala	His	Glu	Arg	Gly
			180						185					190	
Ile	Arg	Met	Ala	Met	Gly	Phe	Glu	Phe	Gly	Val	Ile	Pro	Ser	Glu	Tyr
		195						200					205		
Phe	Ser	Leu	Asn	Val	Ala	Gly	Asp	Cys	Phe	Tyr	Trp	Ala	Gly	Glu	Ser
	210					215						220			
Asn	Met	Ile	Pro	Asn	Pro	Lys	Ser	Gln	Ile	Ala	Glu	Ile	His	Tyr	
225					230						235				240
Ala	Ala	Ile	Asp	Asp	Ile	Leu	Asn	Thr	Tyr	Pro	Asp	Ile	Asp	Tyr	Ile
				245						250					255
Trp	Met	Trp	Leu	Asn	Glu	His	Ser	Phe	Met	Gly	Val	Asp	Val	Gln	Lys
			260						265					270	
Ala	Leu	Arg	Asp	Lys	Pro	Phe	Ala	Arg	Ala	Tyr	Gln	Glu	Asn	Gln	Ala
		275						280						285	
Leu	Phe	Lys	Glu	Ala	Ala	Asp	Ser	Ser	Ala	Arg	Phe	Val	Gly	Val	Trp
	290					295					300				
Ala	Leu	Glu	Tyr	Met	Lys	Leu	Thr	Tyr	Lys	His	Leu	Lys	Ser	Lys	Gly
305					310						315				320
Ser	Arg	Ala	Lys	Leu	Ile	Leu	Gly	Gly	Trp	Gly	Gly	Gly	His	Gln	Leu
				325					330					335	
Pro	Ser	Leu	Leu	Lys	Gly	Leu	Asp	Arg	Ala	Leu	Pro	Gln	Asp	Ile	Ile
			340					345						350	
Phe	Ser	Cys	Leu	Asn	Pro	Asp	Leu	Gly	Lys	Ser	Pro	Gln	Pro	Asp	Phe
		355						360					365		
Leu	Glu	Glu	Ile	Ala	Arg	Asn	Arg	Ser	Val	Trp	Ala	Val	Pro	Trp	Leu
		370				375						380			
Glu	Gly	Asp	His	Gln	Leu	Trp	His	Phe	Gln	Pro	Arg	Val	Asn	Met	Met
385					390						395				400
Arg	Glu	Gln	Val	Lys	Leu	Ala	Ala	Glu	Gln	Asn	Leu	Asp	Gly	Val	Ile
				405						410					415
Ala	Ile	His	Trp	Arg	Thr	Glu	Glu	Pro	Arg	Phe	Asn	Phe	Arg	Thr	Phe
			420						425					430	
Ala	Arg	Phe	Ala	Ser	Asp	Lys	Gly	Ala	Asp	Glu	Ser	Val	Asp	Gln	Leu
		435					440						445		
Tyr	Asp	Arg	Tyr	Leu	Thr	Glu	Glu	Phe	Gly	Glu	Glu	Ala	Ala	Lys	Glu
	450					455						460			
Met	Thr	Pro	Leu	Leu	Ala	Arg	Met	Asp	Arg	Glu	Gln	Ile	Gln	Trp	Asn
465					470						475				480
Val	Pro	Ser	Pro	Glu	Phe	Tyr	Ala	Tyr	Thr	Pro	Glu	Trp	Gly	Leu	Leu
				485					490					495	
Asp	Glu	Asn	Asn	Val	Arg	Ile	Arg	Gln	Glu	Leu	Val	Ser	Ser	Gly	Glu
			500					505					510		
Ser	Leu	Leu	Lys	Lys	Leu	Arg	Gly	Glu	Lys	Arg	Glu	Asn	Leu	Lys	Arg

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515 520 525
 Phe Ile Ala Met Phe Arg Phe Glu Leu Leu Leu Gly Glu Val Asp Arg
 530 535 540
 Ala Met Met Pro Ala Phe Ile Leu Lys Lys Lys Glu Val Gln Gly Glu
 545 550 555 560
 Lys Ile Asn Gly Ser Gln Glu Tyr Met Asp Ala Tyr Arg Leu Leu Val
 565 570 575
 Ser Ala Pro Val Lys Glu Met Phe Asp Thr Tyr Met Glu Arg Val His
 580 585 590
 Ser Arg Gly Glu Leu Gly Val Leu Ser Ser Leu Asn Gln Arg Val Trp
 595 600 605
 Arg Glu Tyr Asn Asp Leu Lys Ile Tyr Leu Glu Asn Lys Ile Lys Glu
 610 615 620
 Lys
 625

<210> 6017
 <211> 219
 <212> PRT
 <213> B.fragilis

<400> 6017

Arg Tyr Lys Asp Met Lys Lys Leu Ile Ile Phe Asp Leu Asp Gly Thr
 1 5 10 15
 Leu Leu Asn Thr Ile Ala Asp Leu Ala His Ser Thr Asn His Ala Leu
 20 25 30
 Gln Thr Leu Gly Tyr Pro Thr His Glu Val Ala Ser Tyr Asn Phe Met
 35 40 45
 Val Gly Asn Gly Ile Asn Lys Leu Phe Glu Arg Ala Leu Pro Glu Gly
 50 55 60
 Glu Lys Thr Glu Glu Asn Val Leu Arg Val Arg Lys Glu Phe Leu Leu
 65 70 75 80
 His Tyr Asp Arg His Asn Ala Asp Glu Ser Arg Pro Tyr Pro Gly Ile
 85 90 95
 Pro Glu Leu Leu Glu Thr Leu Gln His Lys Gly Tyr Lys Leu Ala Val
 100 105 110
 Ala Ser Asn Lys Tyr Gln Ala Ala Thr Glu Lys Leu Ile Ala His Tyr
 115 120 125
 Phe Pro Gly Ile Arg Phe Val Ala Val Phe Gly Gln Arg Glu Gly Val
 130 135 140
 Lys Val Lys Pro Asp Pro Ala Val Val His Asp Ile Leu Gln Ile Ala
 145 150 155 160
 Asp Val Ser Lys Asp Glu Val Leu Tyr Val Gly Asp Ser Gly Val Asp
 165 170 175
 Met Gln Thr Ala Ile Asn Ser Gly Val Thr Ser Cys Gly Val Thr Trp
 180 185 190
 Gly Phe Arg Pro Arg Thr Glu Leu Glu Ser Phe Cys Pro Asp Tyr Ile
 195 200 205
 Val Asp Lys Ala Glu Thr Ile Leu Ser Ile Val
 210 215

<210> 6018
 <211> 498
 <212> PRT
 <213> B.fragilis

<400> 6018

Ser Thr Lys Asp Met Asn Phe Leu Ser Leu Phe Val Leu Ile Pro Leu
 1 5 10 15

[illegible]

485

490

495

Ile Pro

<210> 6019

<211> 531

<212> PRT

<213> B.fragilis

<400> 6019

Asn	Met	Glu	Glu	Ile	Lys	Tyr	Ile	Glu	Pro	Ala	Ala	Leu	His	Asp	Glu	1	5	10	15
Met	Leu	Arg	Leu	Arg	Asn	Glu	Lys	Gln	Met	Asp	Phe	Leu	Glu	Ser	Leu	20	25	30	
Thr	Gly	Met	Asp	Trp	Gly	Val	Ala	Asp	Glu	Gly	Asp	Ala	Pro	Asn	Val	35	40	45	
Thr	Arg	Gly	Leu	Gly	Val	Val	Tyr	His	Leu	Glu	Ser	Thr	Val	Thr	Gly	50	55	60	
Glu	Arg	Ile	Ala	Ile	Lys	Thr	Ser	Thr	Asn	Asn	Arg	Glu	Thr	Pro	Glu	65	70	75	80
Ile	Pro	Ser	Val	Ser	Asp	Ile	Trp	Lys	Ala	Ala	Asp	Phe	Asn	Glu	Arg	85	90	95	
Glu	Val	Phe	Asp	Tyr	Tyr	Gly	Ile	Val	Phe	Ile	Gly	His	Pro	Asp	Met	100	105	110	
Arg	Arg	Leu	Tyr	Leu	Arg	Asn	Asp	Trp	Val	Gly	His	Pro	Met	Arg	Lys	115	120	125	
Asp	Asn	Asn	Pro	Glu	Lys	Asp	Asn	Pro	Leu	Arg	Met	Asp	Asn	Glu	Glu	130	135	140	
Thr	Tyr	Asp	Thr	Thr	Arg	Glu	Ile	Glu	Leu	Asn	Pro	Asp	Gly	Thr	Tyr	145	150	155	160
Gln	Thr	Gln	Glu	Asn	Val	Ile	Phe	Asp	Asp	Arg	Glu	Tyr	Val	Val	Asn	165	170	175	
Ile	Gly	Pro	Gln	His	Pro	Ala	Thr	His	Gly	Val	Met	Arg	Phe	Arg	Val	180	185	190	
Ser	Leu	Glu	Gly	Glu	Thr	Ile	Lys	Lys	Leu	Asp	Ala	Asn	Cys	Gly	Tyr	195	200	205	
Ile	His	Arg	Gly	Ile	Glu	Lys	Met	Asn	Glu	Ser	Leu	Thr	Tyr	Pro	Gln	210	215	220	
Thr	Leu	Ala	Leu	Thr	Asp	Arg	Leu	Asp	Tyr	Leu	Gly	Ala	His	Gln	Asn	225	230	235	240
Arg	His	Ala	Leu	Cys	Met	Cys	Ile	Glu	Lys	Ala	Met	Gly	Ile	Glu	Val	245	250	255	
Ser	Glu	Arg	Val	Lys	Tyr	Ile	Arg	Thr	Ile	Met	Asp	Glu	Leu	Gln	Arg	260	265	270	
Ile	Asp	Ser	His	Leu	Leu	Phe	Tyr	Ser	Cys	Leu	Ala	Met	Asp	Leu	Gly	275	280	285	
Ala	Leu	Thr	Ala	Phe	Phe	Tyr	Gly	Phe	Arg	Asp	Arg	Glu	Met	Ile	Leu	290	295	300	
Asp	Met	Phe	Glu	Glu	Thr	Cys	Gly	Gly	Arg	Leu	Ile	Met	Asn	Tyr	Asn	305	310	315	320
Thr	Ile	Gly	Gly	Val	Gln	Ala	Asp	Leu	His	Pro	Asn	Phe	Ile	Pro	Arg	325	330	335	
Val	Lys	Lys	Phe	Ile	Pro	Tyr	Leu	Arg	Gly	Ile	Ile	His	Glu	Tyr	His	340	345	350	
Asp	Val	Phe	Thr	Gly	Asn	Val	Ile	Ala	Arg	Gln	Arg	Leu	Lys	Gly	Val	355	360	365	
Gly	Val	Leu	Ser	Arg	Glu	Asp	Ala	Ile	Ser	Phe	Gly	Cys	Thr	Gly	Gly	370	375	380	
Thr	Gly	Arg	Ala	Ser	Gly	Trp	Ala	Cys	Asp	Val	Arg	Lys	Arg	Met	Pro				

385 390 395 400
 Tyr Gly Val Tyr Asp Lys Val Asp Phe Lys Glu Ile Val Tyr Thr Glu
 405 410 415
 Gly Asp Ser Phe Ala Arg Tyr Met Val Arg Met Asp Glu Ile Met Glu
 420 425 430
 Ser Leu Asn Ile Ile Glu Gln Leu Ile Asp Asn Ile Pro Glu Gly Pro
 435 440 445
 Ile Gln Glu Lys Met Lys Pro Ile Ile Arg Val Pro Glu Gly Ser Tyr
 450 455 460
 Tyr Thr Ala Val Glu Gly Ser Arg Gly Glu Phe Gly Val Phe Leu Glu
 465 470 475 480
 Ser His Gly Asp Lys Thr Pro Tyr Arg Leu His Tyr Arg Ser Thr Gly
 485 490 495
 Leu Pro Leu Val Ser Ala Val Asp Thr Ile Cys Arg Gly Ala Lys Ile
 500 505 510
 Ala Asp Leu Ile Ala Ile Gly Gly Thr Leu Asp Tyr Val Val Pro Asp
 515 520 525
 Ile Asp Arg
 530

<210> 6020

<211> 536

<212> PRT

<213> B.fragilis

<400> 6020

Ala Leu Leu Asp Pro Leu Asp Glu Lys Ala Tyr Asp Phe Val Ser Pro
 1 5 10 15
 Glu Gln Leu Gly Asp Ser Glu Ser Ala Ala Ser Gln Leu Val Thr Gly
 20 25 30
 Ala Tyr Asn Thr Val Ile Thr Ser Phe Ile Ala Pro Gly Ser Tyr Leu
 35 40 45
 Tyr Leu Thr Asn Met Asp Cys Asp Tyr Ala Ser Gly Ala Ser Trp Ala
 50 55 60
 Phe Gly Asn Val Gly Ala Gly Asn Pro Gln Gly Phe Trp Gly Ile Asp
 65 70 75 80
 His Met Trp Gln Gly Ser Tyr Thr Leu Ile His Arg Ala Asn Leu Gly
 85 90 95
 Ile Ser Lys Ile Ser Ala Met Ser Asn Leu Ser Gln Glu Ser Lys Gln
 100 105 110
 Asp Ala Leu Ala Gln Leu Cys Phe Leu Lys Ala Trp Ala Tyr Phe Asn
 115 120 125
 Leu Val Arg Asn Tyr Gly Pro Val Pro Ile Phe Arg Lys Ser Ile Ser
 130 135 140
 Glu Gly Glu Ala Met Ser Gln Pro Arg Ala Ser Val Ser Asp Val Tyr
 145 150 155 160
 Ala His Ile Ile Glu Leu Leu Glu Gln Ala Glu Gly Met Tyr Ser Lys
 165 170 175
 Asp Asp Ala Gly Phe Val Val Gly His Ala Ser Asn Gly Ala Ala Lys
 180 185 190
 Ala Leu Leu Ala Lys Val Tyr Val Thr Met Ala Ser Gly Ala Met Ser
 195 200 205
 Gly Val Pro Ile Val Val Lys Gly Gly Asn Pro Asn Ile Phe Glu Pro
 210 215 220
 Gln Pro Ile Thr His Ile Ala Lys Thr Val Ala Gly Tyr Glu Ser Phe
 225 230 235 240
 Asp Pro Ala Lys Tyr Tyr Ala Leu Ala Arg Asp Lys Ala Trp Glu Val
 245 250 255
 Ile Asn Glu Tyr Thr Leu Phe Asp Asn Tyr Met Asp Val Trp Ala Ile

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[illegible]

<400> 6021

Asn	Val	Met	Glu	Leu	Ser	Leu	Tyr	Ile	Lys	Asp	Lys	Leu	Val	Ser	Gly
1				5					10					15	
Lys	Arg	Val	Ala	Ile	Pro	Ile	Met	Thr	His	Pro	Gly	Ile	Glu	Leu	Leu
			20					25					30		
Glu	Lys	Arg	Val	Leu	Asp	Ala	Val	Thr	Asn	Gly	Glu	Ile	His	Tyr	His
		35				40						45			
Ala	Ile	Arg	Ala	Leu	Asn	Glu	Cys	Phe	Pro	Gln	Ser	Ala	Ala	Cys	Thr
	50					55					60				
Thr	Ile	Met	Asp	Leu	Thr	Val	Glu	Ala	Glu	Ala	Phe	Gly	Ala	Arg	Leu
65				70					75					80	
Ser	Met	Ser	Pro	Asn	Glu	Val	Pro	Ser	Val	Cys	Gly	Arg	Leu	Leu	Thr
				85					90					95	
Gly	Tyr	Ala	Asp	Val	Glu	Ala	Leu	Gln	Ile	Pro	Ser	Val	Glu	Ser	Gly
			100					105					110		
Arg	Met	Pro	Gln	Tyr	Leu	Leu	Ala	Asp	Arg	Leu	Ala	Ala	Glu	Gly	Ile
		115					120					125			
Asp	Lys	Pro	Val	Leu	Ala	Gly	Cys	Ile	Gly	Pro	Tyr	Ser	Leu	Ala	Gly

130	135	140
Arg Leu Tyr Asp Met Thr Glu Ile Met Met Ala Ile Tyr Thr Glu Pro		
145	150	155
Asp Thr Val Leu Leu Leu Glu Lys Cys Thr Glu Phe Ile Leu Arg		160
	165	170
Tyr Cys Leu Ala Ile Lys Glu Thr Gly Val Ala Gly Val Ile Met Ala		175
	180	185
Glu Pro Ala Ala Gly Leu Leu Ser Asn Glu Asp Cys Gln Arg Tyr Ser		190
	195	200
Ser Val Tyr Val Lys Arg Ile Ile Asp Ala Val Gln Asp Asp Ser Phe		205
	210	215
Ala Val Ile Leu His Asn Cys Gly Asn Thr Gly His Cys Thr Ala Ala		220
225	230	235
Met Leu Ala Thr Gly Ala Lys Gly Tyr His Phe Gly Asn Lys Ala Asp		240
	245	250
Met Ile Thr Ala Leu Arg Glu Cys Pro Ser Asp Val Trp Val Met Gly		255
	260	265
Asn Leu Asp Pro Val Gly Val Phe Arg Val Leu Thr Pro Glu Asp Val		270
	275	280
Phe Ala Arg Thr Glu Glu Leu Leu Thr Cys Thr Gly Glu Tyr Ala Asn		285
	290	295
Phe Ile Ile Ser Thr Gly Cys Asp Thr Pro Pro Glu Val Pro Phe Asp		300
305	310	315
Asn Ile Gln Ala Phe Tyr Leu Ala Val Glu Lys Tyr Asn Lys Gly Arg		320
	325	330
		335

<210> 6022

<211> 485

<212> PRT

<213> B.fragilis

<400> 6022

Lys Lys Met Asp Tyr Ser Gln Phe Leu Tyr Met Lys Glu Glu Leu Ser		
1	5	10
Leu Ile Ala Val Ile Leu Ile Leu Phe Val Val Asp Leu Phe Thr Cys		15
	20	25
Pro Asp Gln Lys Gly Ala Ala Pro Lys Val Asn Val Arg Ser Leu Thr		30
	35	40
Leu Pro Ala Val Ile Leu Met Thr Leu His Thr Val Ile Asn Leu Phe		45
	50	55
Pro Gly Thr Pro Ala Glu Ala Phe Gly Gly Met Tyr Gln Tyr Thr Pro		60
65	70	75
Met Gln Thr Ile Ile Lys Ala Val Leu Asn Val Gly Thr Ile Ile Val		80
	85	90
Leu Leu Met Ala His Glu Trp Leu Arg Arg Glu Asp Thr Arg Ile Lys		95
	100	105
Gln Gly Glu Phe Tyr Val Leu Thr Leu Ser Thr Leu Leu Gly Met Tyr		110
	115	120
Phe Met Ile Ser Ala Gly His Phe Leu Met Phe Phe Ile Gly Leu Glu		125
	130	135
Met Ala Ser Ile Pro Met Ala Ala Leu Val Ala Phe Asp Lys Tyr Arg		140
145	150	155
His His Ser Ala Glu Ala Gly Ala Lys Tyr Ile Leu Thr Ala Leu Phe		160
	165	170
Ser Ser Ala Leu Leu Leu Phe Gly Leu Ser Met Ile Tyr Gly Thr Ser		175
	180	185
Gly Thr Leu Tyr Phe Asn Asp Leu Pro Gly His Ile Thr Gly Asn Met		190
	195	200
Leu Gln Ile Met Ala Phe Val Phe Phe Phe Ala Gly Met Gly Phe Lys		205

210		215		220
Ile Ser Leu Val Pro Phe His Leu Trp Thr Ala Asp Val Tyr Glu Gly				
225		230		240
Ala Pro Thr Ala Val Thr Ser Tyr Leu Ser Val Ile Ser Lys Gly Ser				
	245		250	255
Ala Ala Phe Val Leu Met Thr Ile Leu Met Lys Val Phe Ala Pro Met				
	260		265	270
Val Ala Gln Trp Gln Glu Val Leu Phe Trp Val Thr Ile Ala Ser Ile				
	275		280	285
Thr Ile Ala Asn Leu Phe Ala Ile Arg Gln Gln Asn Leu Lys Arg Phe				
	290		295	300
Met Ala Phe Ser Ala Ile Ser Gln Ala Gly Tyr Ile Met Leu Gly Val				
305		310		320
Ile Gly Gly Ser Glu Met Gly Met Thr Ala Leu Val Tyr Tyr Val Leu				
	325		330	335
Val Tyr Leu Ala Ala Asn Leu Gly Val Phe Ala Val Ile Ser Ile Val				
	340		345	350
Glu Gln Arg Ser Asn Lys Val Glu Ile Asp Asp Tyr Asn Gly Leu Tyr				
	355		360	365
Lys Thr Asn Pro Lys Leu Ala Phe Ile Met Thr Leu Ala Leu Phe Ser				
	370		375	380
Leu Ala Gly Ile Pro Pro Phe Ala Gly Phe Phe Ser Lys Phe Phe Ile				
385		390		400
Phe Met Ala Ala Phe Asn Ser Gly Phe His Leu Leu Val Phe Ile Ala				
	405		410	415
Leu Ile Asn Thr Val Val Ser Leu Tyr Tyr Tyr Leu Leu Ile Val Lys				
	420		425	430
Ala Met Tyr Ile Asn Pro Asn Glu Glu Pro Ile Pro Thr Phe Arg Ser				
	435		440	445
Asp Asn Tyr Thr Lys Val Ser Leu Ala Leu Cys Thr Leu Gly Ile Ile				
	450		455	460
Ala Leu Gly Ile Ala Ser Cys Ile Tyr Gln Gly Ile Asp Lys Phe Ser				
465		470		475
Phe Gly Met Gly Met				480
	485			

<210> 6023

<211> 126

<212> PRT

<213> B.fragilis

<400> 6023

Thr Tyr Tyr Trp Ile Met Asn Phe Thr Leu Leu Val Val Val Leu Leu				
1	5		10	15
Thr Ala Ile Ala Phe Val Gly Val Val Ile Ala Leu Ser Asn Ala Ile				
	20		25	30
Ser Pro Arg Ser Tyr Asn Ala Gln Lys Phe Glu Ala Tyr Glu Cys Gly				
	35		40	45
Ile Pro Thr Arg Gly Lys Ser Trp Met Gln Phe Arg Val Gly Tyr Tyr				
	50		55	60
Leu Phe Ala Ile Leu Phe Leu Met Phe Asp Val Glu Thr Val Phe Leu				
65		70		75
Phe Pro Trp Ala Val Ile Ala Arg Asp Leu Gly Pro Gln Gly Leu Ile				
	85		90	95
Ser Ile Leu Phe Phe Leu Ala Glu Leu Gly Leu Gly Pro Cys Leu Cys				
	100		105	110
Leu Glu Glu Arg Ser Thr Val Met Glu Ile Met Lys Lys Pro				
	115		120	125

<210> 6024
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 6024

Ala	Glu	Ala	Arg	Phe	Arg	Lys	Ser	Tyr	His	Val	Val	Asn	Gly	Val	Asp
1				5					10					15	
Lys	Ile	Leu	Pro	Val	Asp	Val	Tyr	Ile	Pro	Gly	Cys	Pro	Pro	Arg	Pro
			20					25					30		
Glu	Ala	Phe	Tyr	Tyr	Gly	Met	Met	Gln	Leu	Gln	Arg	Lys	Val	Lys	Ile
		35				40						45			
Glu	Lys	Phe	Phe	Gly	Gly	Val	Asn	Arg	Lys	Glu	Lys	Lys	Pro	Glu	Gly
	50					55					60				
Lys															
65															

<210> 6025
 <211> 518
 <212> PRT
 <213> B.fragilis

<400> 6025

Glu	Asn	Thr	Arg	Arg	Phe	Ser	His	Leu	Pro	Val	Arg	Gln	Met	His	Cys
1				5					10					15	
Leu	Pro	Asp	Ser	Glu	Ile	His	Ile	Gly	Phe	Met	Gln	Thr	Leu	Asp	Lys
			20					25					30		
Met	Glu	Lys	Ile	Lys	Tyr	Cys	Phe	Ser	Met	Ile	Gly	Leu	Leu	Phe	Leu
		35				40					45				
Phe	Ala	Ala	Cys	Gln	Glu	Lys	Val	Thr	Ser	Pro	Ala	Arg	Val	Asp	Thr
	50					55				60					
Leu	Pro	Ser	Ile	Phe	Pro	Asp	Tyr	Val	Gly	Val	Thr	Ile	Pro	Ser	Thr
65					70				75					80	
Ile	Ala	Pro	Leu	Asn	Phe	Arg	Val	Thr	Asp	Asp	Gly	Val	Glu	Ala	Val
			85						90				95		
Asp	Val	Val	Ile	Ala	Gly	Thr	Lys	Gly	Lys	Pro	Val	Arg	Leu	Asn	Gly
			100					105					110		
Arg	Leu	Val	Asp	Ile	Pro	Ala	Lys	Gln	Trp	His	Glu	Leu	Leu	Glu	Ser
		115					120					125			
Asn	Lys	Gly	Asp	Ser	Ile	Glu	Val	Lys	Val	Ser	Val	Arg	Gln	Gly	Lys
	130					135					140				
Lys	Trp	Lys	Glu	Tyr	Arg	Pro	Phe	Pro	Ile	Tyr	Val	Ser	Pro	Phe	Pro
145					150					155					160
Ile	Asp	Tyr	Gly	Leu	Val	Tyr	Arg	Leu	Leu	Ala	Pro	Gly	Tyr	Glu	Val
			165					170						175	
Tyr	Ser	Lys	Met	Gly	Ile	Tyr	Glu	Arg	Glu	Leu	Ser	Thr	Phe	Arg	Gln
			180				185						190		
Thr	Pro	Leu	Phe	Glu	Asn	Thr	Gln	Val	Thr	Ala	Ala	Cys	Ile	Asn	Cys
		195				200						205			
His	Ala	Phe	Asn	Arg	Thr	Glu	Pro	Thr	Pro	Ser	Ser	Val	His	Val	Arg
	210					215					220				
Gly	Gly	His	Gly	Ala	Thr	Val	Ile	Asp	Thr	Gly	Asp	Arg	Leu	Glu	Phe
225					230					235					240
Leu	Asp	Thr	Lys	Ala	Asp	Gly	Gln	Leu	Ser	Ala	Cys	Val	Tyr	Pro	Tyr
			245						250					255	
Trp	His	Pro	Ser	Gly	Glu	Tyr	Ile	Ala	Tyr	Ser	Val	Asn	Lys	Thr	Asn
			260				265						270		
Gln	Ala	Phe	His	Leu	Gly	Gly	Lys	Lys	Pro	Ile	Glu	Val	Phe	Asp	Gln
		275					280						285		

Ala Ser Asp Val Val Val Tyr His Pro Arg Ser His Arg Ile Leu Thr
 290 295 300
 Thr Pro Leu Leu Ser Thr Ala Ser Phe Glu Thr Phe Pro Ala Phe Ser
 305 310 315 320
 Pro Asp Gly Arg Thr Leu Tyr Phe Cys Ser Ala Glu Gln Lys Glu Met
 325 330 335
 Pro Val Arg Tyr Lys Asp Val Lys Tyr Ser Leu Cys Ser Ile Ala Phe
 340 345 350
 His Pro Glu Asp Gly Thr Phe Gly Asp Arg Ile Asp Thr Leu Ile Ser
 355 360 365
 Ala Arg Thr Leu Asp Lys Ser Ile Ser Phe Pro Lys Pro Ser Phe Asp
 370 375 380
 Gly Lys Tyr Leu Met Phe Thr Leu Ser Asp Tyr Gly Asn Phe Ser Ile
 385 390 395 400
 Trp His Lys Glu Ala Asp Leu Trp Leu Leu Asp Leu Lys Thr Gly Thr
 405 410 415
 Tyr Arg Asn Leu Glu Glu Val Asn Ser Asp Asp Thr Glu Ser Tyr His
 420 425 430
 Asn Trp Ser Ser Asn Ser His Trp Phe Val Phe Ser Ser Arg Arg Gly
 435 440 445
 Asp Gly Leu Tyr Thr Arg Leu Tyr Ile Ser Ser Val Asp Gly Gln Gly
 450 455 460
 Arg Ile Gly Lys Pro Phe Leu Leu Pro Gln Gln Asp Pro Tyr Thr Phe
 465 470 475 480
 Tyr Asp Gln Leu Ile Tyr Ser Tyr Asn Val Pro Glu Phe Val Ser Val
 485 490 495
 Pro Val Gln Trp Asp Lys Arg Glu Met Ala Lys Gly Leu Met Ser Lys
 500 505 510
 Glu Arg Val Lys Val Lys
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<210> 6026

<211> 251

<212> PRT

<213> B.fragilis

<400> 6026

Cys Gln Cys Ser Arg Asn Asn Gly Gln Glu Val Asp Lys Arg Leu Leu
 1 5 10 15
 Asn Met Pro Leu Met Asn Ser His Ile Val Glu Glu Cys Leu Pro Phe
 20 25 30
 Thr Ser Leu Arg Leu Asp Pro Glu Asp Ile Asn Leu Ser Met Gly Ala
 35 40 45
 Gly Tyr Val Pro Asp Ala Glu Ile Gln Ala Ile Ser Asp Ala Leu Glu
 50 55 60
 Thr Glu Ile Ala Gly Ile Cys Thr Pro Arg Phe Leu Tyr Ala Leu Phe
 65 70 75 80
 Asp Ala Glu Pro Ala Gly Thr Cys Glu Val Gly Val Asn Gly Ile Ser
 85 90 95
 Leu Lys Thr Gly Ser Val Ile Thr Pro Tyr Leu Lys Asp Ala Ala Gly
 100 105 110
 Tyr Val Leu Phe Val Ala Thr Ala Gly Tyr Glu Phe Glu Ala Phe Gln
 115 120 125
 His Arg Ile Gly Ser Gln Gly Asp Ile Leu Arg Glu Phe Leu Leu Asp
 130 135 140
 Ala Tyr Gly Ser Ala Ile Ala Glu Ala Val Val Arg Glu Val Cys Arg
 145 150 155 160
 Lys Val Glu Ser Arg Met Phe Pro Leu Gly Tyr Gly Val Ser His Pro
 165 170 175

Tyr Ser Pro Gly Tyr Cys Gly Trp His Val Thr Gln Gln Gln Leu Leu
 180 185 190
 Phe Ser Cys Leu Pro Glu Phe Pro Cys Gly Val Arg Leu Ser Asp Ser
 195 200 205
 Ser Leu Met Ser Pro Ile Lys Ser Val Ser Gly Ile Ile Ala Tyr Gly
 210 215 220
 Pro Cys Ile Val Lys Arg Lys Tyr Gly Cys Glu Leu Cys Gly Lys Ala
 225 230 235 240
 Asp Cys Tyr Lys Asn Arg Asn Lys Leu Asn Arg
 245 250

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<400> 6027

Gln Gln Lys Gly Lys Asn Leu Asn Leu Lys Thr Glu Lys Glu Thr Leu
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 Met Gly Ser Lys Lys Thr Asp Leu Met Arg Ile Ser Tyr Phe Val Ala
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 Ile Val Ile Leu Val Cys Leu Ile Gly Asn Leu Lys Asp Leu Trp Leu
 35 40 45
 Gln Ser Trp Thr Asp Leu Ile Tyr Leu Ile Val Leu Phe Ala Ala
 50 55 60
 Ala Glu Cys Leu Phe Ser Thr Phe Ala Arg Ile Arg Ala Val Gly Glu
 65 70 75 80
 Gln Lys Gln Pro Arg Trp Leu Thr Ser Ile Ser Leu Leu Ile Tyr Gly
 85 90 95
 Ile Leu Phe Leu Gly Thr Leu Phe Phe Ile Gly Asp Phe Leu Ile Asn
 100 105 110
 Lys Leu

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Lys Asn Met Gly Leu Thr Leu Glu Thr Val Val Phe Tyr Phe Leu Ala
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 Val Phe Ile Ile Ala Met Ser Ile Leu Thr Val Thr Thr Gln Arg Ile
 20 25 30
 Val Arg Ser Ala Thr Tyr Leu Leu Phe Val Leu Phe Gly Thr Ala Gly
 35 40 45
 Ile Tyr Phe Leu Leu Gly Tyr Thr Phe Leu Gly Ser Val Gln Ile Met
 50 55 60
 Val Tyr Ala Gly Gly Ile Val Val Leu Tyr Val Phe Ser Ile Leu Leu
 65 70 75 80
 Thr Ser Gly Glu Gly Asp Arg Ala Ala His Leu Lys Arg Ser Lys Phe
 85 90 95
 Leu Ala Gly Leu Val Thr Thr Ile Ile Gly Ala Ile Leu Val Leu Phe
 100 105 110
 Ile Thr Leu Thr His Lys Phe Val Pro Thr Ser Asp Pro Glu Pro Val
 115 120 125
 Glu Ile Ser Ile Lys Thr Ile Gly His Ala Leu Leu Ser Ser Gly Lys
 130 135 140
 Tyr Gly Tyr Val Leu Pro Phe Glu Ala Val Ser Ile Leu Leu Leu Ala

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 Cys Ile Val Gly Gly Leu Leu Ile Ala Arg Lys Arg
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 Val Cys Ser Glu Tyr Leu Cys Asp Leu Leu Gly Leu Glu Gly Asn Thr
 35 40 45
 Ile Ser Phe Thr Asp Phe Arg Lys Arg Val Arg Glu Asp Tyr Gln Glu
 50 55 60
 Gln Ile Val Arg Glu Phe Asn Ala Ser Ile His Arg Glu Phe Tyr Glu
 65 70 75 80
 Gln Thr Phe Pro Ile His Ser Lys Glu Gly Ile Val Trp Leu His Thr
 85 90 95
 Arg Leu Gly Glu Arg Glu Glu Ile Pro Gly Arg Gly Val Val Ser Phe
 100 105 110
 Gly Ile Met Gln Arg Val Glu Ala Pro Asn Asp Thr Ser Glu Arg Val
 115 120 125
 Leu Glu Arg Val Asn Asp Leu Leu Tyr Arg Gln Asn Ser Ile Ser His
 130 135 140
 Ser Leu Leu Arg Phe Leu Lys Asp Asp Ser Val Asp Leu Cys Ile Met
 145 150 155 160
 Glu Ile Leu Lys Asp Ile Leu Asp Leu Phe His Gly Gly Arg Val Tyr
 165 170 175
 Ile Phe Glu Tyr Asp Glu Tyr Tyr Arg Tyr Gln Asp Cys Thr Tyr Glu
 180 185 190
 Val Val Ala Glu Gly Val Leu Pro Glu Ile Asp Ser Leu Gln Arg Ile
 195 200 205
 Pro Thr Asp Ser Leu Pro Trp Trp Arg Gln Gln Thr Leu Ser Gly Lys
 210 215 220
 Pro Val Ile Leu Asp Ser Leu Asp Gln Leu Pro Lys His Ala Lys Ala
 225 230 235 240
 Glu Tyr Ala Ile Leu Ser Arg Gln Asn Ile Lys Ser Leu Met Ile Thr
 245 250 255
 Pro Leu Ile Ala Gly Glu His Val Trp Gly Tyr Met Gly Ile Asp Leu
 260 265 270
 Val Lys Asn Tyr Arg Asn Trp Asn Asn Glu Asp Phe Gln Trp Leu Ser
 275 280 285
 Ser Leu Ala Asn Ile Ile Ser Ile Cys Ile Glu Leu Arg Lys Ala Lys
 290 295 300
 Asp Glu Ala Val Arg Glu Arg Ser Phe Leu Arg Asn Leu Phe Arg Phe
 305 310 315 320
 Met Pro Met Gly Tyr Ile Arg Met Thr Met Val Arg Asp Ala Ala Gly
 325 330 335
 Leu Pro Cys Asp Tyr Arg Ile Ala Asp Ala Asn Asp Leu Ser Ser Glu
 340 345 350
 Leu Ile Gly Met Pro Leu Ser Asp Tyr Val Gly Cys Leu Ala Ser Glu
 355 360 365
 Leu His Ala Asp Phe Lys Ala Lys Val Asp Tyr Leu Leu Asp Val Met
 370 375 380
 Glu Gly Ser Val His Lys Glu Thr Asp Val Tyr Phe His Arg Thr Gln

385					390					395				400
Arg	Ser	Ser	His	Cys	Ile	Val	Tyr	Ser	Pro	Glu	Lys	Asp	Glu	Val
				405					410				415	
Ala	Leu	Phe	Leu	Asp	Ser	Thr	Glu	Thr	Ile	Arg	Ala	His	Arg	Ala
			420					425					430	Leu
Asp	Arg	Ser	Glu	Lys	Leu	Phe	Lys	Asn	Ile	Phe	Ala	Asn	Ile	Pro
		435					440					445		Ala
Gly	Val	Glu	Ile	Tyr	Asp	Lys	Asp	Gly	Asn	Leu	Leu	Asp	Leu	Asn
	450					455				460				
Trp	Asp	Met	Glu	Thr	Phe	Gly	Val	Lys	Asp	Lys	Ala	Asp	Val	Met
465					470					475				480
Val	Asn	Phe	Phe	Glu	Asn	Pro	Asn	Val	Pro	Leu	Glu	Ile	Arg	Glu
				485					490					495
Val	Arg	Asn	Glu	Asp	Leu	Val	Asp	Phe	Arg	Leu	Asn	Tyr	Ser	Phe
			500					505				510		Asn
Lys	Ala	Ser	Asp	Tyr	Tyr	His	Ser	Asp	Lys	Ser	Asn	Ile	Ile	Glu
		515					520					525		Leu
Tyr	Thr	Lys	Val	Ser	Lys	Leu	Phe	Asp	Ser	Gln	Gly	Asn	Phe	Asn
	530					535					540			Gly
Tyr	Val	Leu	Ile	Asn	Ile	Asp	Asn	Thr	Glu	Arg	Ile	Asp	Ala	Ile
545					550					555				560
Arg	Ile	Arg	Asp	Phe	Glu	Asn	Phe	Phe	Leu	Leu	Ile	Ser	Asp	Tyr
				565					570					575
Lys	Val	Gly	Tyr	Ala	Lys	Leu	Asn	Leu	Leu	Ser	Lys	Arg	Gly	Tyr
			580					585					590	Ala
Ile	Lys	Gln	Trp	Phe	Lys	Asn	Met	Gly	Glu	Thr	Glu	Asp	Ile	Pro
		595					600					605		Leu
Ser	Ser	Val	Val	Gly	Val	Tyr	Asp	Lys	Met	His	Pro	Glu	Asp	Arg
	610					615					620			Gln
Lys	Val	Phe	Asp	Phe	Tyr	Glu	Lys	Val	Leu	Ala	Gly	Glu	Glu	Lys
625					630					635				640
Phe	Arg	Ser	Glu	Met	Arg	Ile	Leu	Lys	Pro	Gly	Ala	Thr	Asn	Glu
				645					650					655
Asn	Trp	Val	Arg	Met	Asn	Val	Val	Val	Thr	Lys	Phe	Glu	Pro	Glu
		660						665					670	His
Gly	Glu	Val	Glu	Ile	Ile	Gly	Ile	Asn	Tyr	Asp	Ile	Thr	Glu	Leu
	675						680					685		Lys
Glu	Thr	Glu	Ala	Met	Leu	Ile	Glu	Ala	Lys	Glu	Lys	Ala	Glu	Asn
	690					695				700				Met
Asp	Arg	Leu	Lys	Ser	Ala	Phe	Leu	Ala	Asn	Met	Ser	His	Glu	Ile
705					710					715				720
Thr	Pro	Leu	Asn	Ala	Ile	Val	Gly	Phe	Ser	Gly	Leu	Leu	Val	Asp
				725					730					735
Glu	Asp	Met	Glu	Glu	Arg	Cys	Glu	Tyr	Ile	Lys	Ile	Val	Gln	Glu
			740					745					750	Asn
Asn	Asp	Leu	Leu	Leu	Gln	Leu	Ile	Ser	Asp	Ile	Leu	Asp	Leu	Ser
		755					760					765		Lys
Ile	Glu	Ala	Gly	Thr	Phe	Glu	Phe	Thr	Tyr	Gly	Glu	Thr	Asp	Val
	770					775					780			Asn
Met	Leu	Cys	Glu	Asp	Ile	Val	Arg	Ser	Ser	Gln	Ile	Lys	Val	Pro
785					790					795				800
Gly	Val	Glu	Leu	Val	Phe	Asp	Pro	His	Pro	Ser	Asp	Cys	Thr	Val
				805					810					815
Ser	Asp	Arg	Asn	Arg	Leu	His	Gln	Val	Ile	Ser	Asn	Phe	Val	Asn
			820					825					830	Asn
Ala	Leu	Lys	Phe	Thr	Ser	Ser	Gly	Ser	Ile	His	Val	Gly	Tyr	Glu
		835					840					845		Lys
Lys	Glu	Glu	Gly	Val	Glu	Phe	Tyr	Val	Ser	Asp	Thr	Gly	Ile	Gly
	850					855					860			Ile

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Ser Lys Glu Gln Leu Thr His Ile Phe Glu Arg Phe Val Lys Leu Asn
 865 870 875 880
 Ser Phe Ile His Gly Thr Gly Leu Gly Leu Ser Ile Cys Lys Ser Ile
 885 890 895
 Val Glu Gln Leu Gly Gly Val Ile Gly Val Asp Ser Glu Glu Gly Lys
 900 905 910
 Gly Ser Arg Phe Trp Phe Thr Ile Pro Tyr Ile Asn Ser Glu Gln Ser
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 Ile Val Asn Asp
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 Lys Met Val Lys Glu Leu Asn Glu Gly Gly Ala Asn Val Leu Val Gly
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 Val Leu Asp Asp Leu Ile Asn Trp Gly Arg Arg Asn Ser Leu Gly Pro
 35 40 45
 Leu Thr Phe Ala Thr Ser Cys Cys Gly Ile Glu Phe Met Ala Leu Gly
 50 55 60
 Ala Ala Arg Tyr Asp Arg Ala Arg Phe Gly Phe Glu Val Ala Arg Ala
 65 70 75 80
 Ser Pro Arg Gln Ala Asp Met Ile Met Val Cys Gly Thr Ile Thr Asn
 85 90 95
 Lys Met Ala Pro Val Leu Lys Arg Leu Tyr Asp Gln Met Ala Asp Pro
 100 105 110
 Lys Tyr Val Ile Ala Val Gly Gly Cys Ala Val Ser Gly Gly Pro Val
 115 120 125
 Ser Gln Ile Leu Ser Cys Gly Glu Arg Ser Arg Gln Asp Ser Pro Gly
 130 135 140
 Arg Cys Ile Tyr Ser Arg Met Pro Ser Pro Pro Gly Ser Ile Leu Leu
 145 150 155 160
 Arg Tyr Asp Ala Thr Ala Thr Glu Ser Glu Asp Arg Glu Ile Leu Arg
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 Arg Ser Lys Pro Glu Arg Glu Lys Thr
 180 185

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 Asn Ile Thr Gly Thr Val Ile Asp Lys Lys Leu Asn Glu Pro Ile Ile
 35 40 45
 Gly Ala Thr Val Gln Val Lys Gly Thr Asn Asn Gly Ser Ile Thr Asp
 50 55 60
 Met Glu Gly Lys Phe Ser Leu Lys Asn Val Ser Lys Gly Gly Ile Leu
 65 70 75 80
 Thr Val Ser Tyr Ile Gly Tyr Thr Thr Gln Ser Ile Pro Leu Asn Gly

				85						90					95			
Thr	Gln	Thr	Ser	Phe	Arg	Ile	Glu	Leu	Ser	Glu	Asp	Ser	Lys	Thr	Leu			
			100					105					110					
Asp	Glu	Val	Val	Val	Val	Gly	Phe	Gly	Thr	Gln	Lys	Lys	Val	Asn	Leu			
		115				120						125						
Thr	Gly	Ala	Val	Thr	Ser	Val	Asp	Thr	Lys	Ala	Leu	Ala	Ser	Arg	Pro			
	130					135					140							
Val	Ser	Gln	Val	Gly	Gln	Ala	Leu	Gln	Gly	Val	Val	Pro	Gly	Leu	Asn			
145					150					155					160			
Leu	Ser	Thr	Pro	Asp	Leu	Gly	Gly	Gln	Leu	Gly	Gln	Thr	Met	Asn	Val			
				165				170						175				
Asn	Ile	Arg	Gly	Thr	Gly	Thr	Ile	Gly	Lys	Gly	Ser	Ser	Ala	Ser	Pro			
			180					185					190					
Leu	Ile	Leu	Ile	Asp	Gly	Met	Glu	Gly	Asn	Met	Asn	Asn	Leu	Asn	Pro			
	195						200					205						
Glu	Asp	Ile	Glu	Asn	Ile	Ser	Val	Leu	Lys	Asp	Ala	Ala	Ser	Ser	Ser			
	210					215					220							
Ile	Tyr	Gly	Ser	Arg	Ala	Ala	Phe	Gly	Val	Ile	Leu	Ile	Thr	Thr	Lys			
225					230					235					240			
Lys	Gly	Lys	Ala	Gly	Lys	Met	Gln	Val	Asn	Tyr	Asn	Asn	Ser	Phe	Arg			
			245					250						255				
Tyr	Ser	Gly	Pro	Thr	Ser	Leu	Pro	Asn	Gln	Leu	Asp	Ser	Tyr	Arg	Phe			
			260					265					270					
Ala	Asn	Tyr	Phe	Asn	Asp	Ala	Ala	Ile	Asn	Gln	Gly	Gly	Ser	Val	Ile			
		275					280					285						
Phe	Asp	Glu	Glu	Thr	Ile	Asp	Arg	Ile	Gln	Lys	Tyr	Met	Ala	Gly	Glu			
	290					295					300							
Ile	Thr	Thr	Thr	Thr	Ile	Ala	Asn	Gly	Thr	Asn	Trp	His	Phe	His	Glu			
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Lys	Ala	Asn	Asp	Asn	Val	Asn	Trp	Trp	Lys	Lys	His	Phe	Gln	Trp	Ala			
			325					330						335				
Trp	Ser	Asn	Glu	His	Asn	Ile	Ser	Leu	Asn	Gly	Gly	Thr	Glu	Lys	Leu			
			340					345					350					
Gln	Tyr	Tyr	Val	Ser	Gly	Ser	Tyr	Leu	Asn	Gln	Asp	Gly	Asn	Leu	Arg			
		355					360					365						
Tyr	Gly	Asn	Asp	Asn	Tyr	Lys	Arg	Tyr	Asn	Ala	Thr	Ala	Lys	Val	Asn			
	370					375					380							
Thr	Gln	Ile	Asn	Lys	Tyr	Val	Asp	Phe	Asn	Ile	Asn	Thr	Lys	Phe	Val			
385					390					395					400			
Arg	Phe	Asp	Leu	Asp	Asn	Pro	Val	Tyr	Leu	Glu	Glu	Gly	Gly	Leu	Leu			
			405					410						415				
Tyr	His	Asp	Ile	Ala	Arg	Met	Trp	Pro	Met	Met	Pro	Phe	Lys	Asp	Pro			
			420					425					430					
Asn	Gly	Tyr	Tyr	Met	Arg	Asn	Gly	Lys	Leu	Asn	Gln	Leu	Thr	Asp	Gly			
		435					440					445						
Gly	Arg	Ala	Lys	Thr	His	Asn	Asp	Asn	Ile	Tyr	Leu	Gln	Gly	Gln	Leu			
	450					455				460								
Val	Ile	His	Pro	Leu	Lys	Gly	Trp	Asn	Ile	Tyr	Ala	Glu	Ala	Gly	Met			
465					470					475					480			
Arg	Val	Ile	Asn	Gln	Asn	Lys	Gln	Thr	Asn	Leu	Asn	Pro	Ile	Tyr	Glu			
			485					490						495				
His	Asp	Val	Asn	Gly	Asn	Pro	Leu	Ala	Leu	Ala	Phe	Ser	Gly	Ser	Tyr			
			500					505					510					
Ser	Pro	Gly	Ser	Ser	Phe	Ala	Arg	Ser	Ala	Tyr	His	Asn	Ser	Asn	Phe			
		515					520					525						
Tyr	Thr	Thr	Ser	Val	Tyr	Thr	Asp	Tyr	Thr	Leu	Gln	Ile	Lys	Asp	His			
	530					535				540								
Tyr	Phe	Lys	Ala	Leu	Val	Gly	Met	Asn	Thr	Glu	Glu	Tyr	Val	Tyr	Arg			
545					550					555					560			

100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560

Glu Leu Ala Ala Gln Arg Pro Asp Val Ile Ser Ser Leu Ile Pro Glu
 565 570 575
 Ile Ser Ala Ala Thr Gly Glu Asp Lys Ile Asn Ser Ser Lys Tyr Asn
 580 585 590
 Asp Trp Ser Thr Ala Gly Phe Phe Gly Arg Leu Asn Tyr Ser Tyr Lys
 595 600 605
 Asp Arg Tyr Met Ala Glu Val Asn Val Arg Tyr Asp Gly Ser Ser Arg
 610 615 620
 Phe Leu Lys Asp Gln Arg Trp Asn Val Phe Pro Ser Phe Ser Leu Gly
 625 630 635 640
 Trp Asn Leu Ala Arg Glu Ser Phe Phe Glu Pro Ile Asn Asn Ile Ile
 645 650 655
 Asn Thr Leu Lys Pro Arg Val Ser Trp Gly Met Leu Gly Asn Gln Asn
 660 665 670
 Thr Asp Ser Tyr Tyr Pro Phe Tyr Leu Thr Gln Ser Val Thr Ala Asn
 675 680 685
 Gly Gly Asn Trp Leu Met Asp Gly Ser Arg Pro Thr Thr Ala Gly Val
 690 695 700
 Pro Gly Met Val Ser Ser Thr Leu Thr Trp Glu Lys Ile Tyr Asn Thr
 705 710 715 720
 Asn Leu Gly Ile Asp Leu Gly Met Phe Asn Asn Arg Leu Asn Met Thr
 725 730 735
 Phe Glu Tyr Phe Ile Arg Arg Thr Lys Asp Met Val Gly Pro Ala Ala
 740 745 750
 Glu Val Gly Ala Ile Leu Gly Thr Ala Leu Pro Asn Thr Asn Asn Ala
 755 760 765
 Glu Leu Lys Asn Lys Gly Trp Glu Leu Gln Ala Asn Trp Arg Asp Asn
 770 775 780
 Ile Gly Lys Val Asn Tyr Asn Ile Gly Phe Asn Leu Ser Asp Asn Arg
 785 790 795 800
 Ala Lys Val Ile Ser Tyr Pro Asn Ala Ser Lys Ala Leu Trp Asp Ser
 805 810 815
 Asn Gly Asn Thr Leu Tyr Tyr Asn Gly Met Thr Ile Gly Glu Ile Trp
 820 825 830
 Gly Tyr Glu Thr Glu Gly Ile Ala Gln Thr Asp Ala Gln Met Thr Glu
 835 840 845
 Trp Leu Ala Ser Asn Asp Gln Ser Lys Ile Gly Ser Val Trp Gly Ala
 850 855 860
 Gly Asp Ile Met Tyr Arg Asp Leu Asn Gly Asp Gly Ile Val Asp Lys
 865 870 875 880
 Gly Asn Ser Thr Ala Thr Asp His Gly Asp Leu Lys Lys Ile Gly Asn
 885 890 895
 Ser Thr Pro Arg Leu Arg Phe Gly Leu Ser Leu Gly Ala Asp Trp Lys
 900 905 910
 Gly Phe Asp Ile Gln Met Phe Phe Gln Gly Val Met Lys Arg Asp Leu
 915 920 925
 Trp Leu Ser Gly Pro Met Phe Trp Gly Ala Asp Gly Gly Glu Trp Gln
 930 935 940
 Ser Val Gly Phe Asp Glu His Leu Asp Tyr Phe Arg Pro Glu Asn Thr
 945 950 955 960
 Thr Ser Ile Phe Gly Ala Asn Leu Asn Ser Tyr Tyr Pro Lys Ala Tyr
 965 970 975
 Leu Gly Asp Lys Gly Asn Lys Asn Lys Gln Thr Gln Thr Arg Tyr Leu
 980 985 990
 Gln Asn Gly Ala Tyr Met Arg Met Lys Asn Leu Gln Ile Gly Tyr Thr
 995 1000 1005
 Phe Pro Lys Ala Trp Met Asn Lys Ala Lys Ile Glu Lys Leu Arg Ile
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 Tyr Val Ser Gly Glu Asn Leu Phe Thr Ile Ser Gly Ile Ala Asp Met

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Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

370 375 380
 Gly Ser Thr Glu Val Val Arg Gln Ala Lys Glu Cys Asn Leu Ala Leu
 385 390 395 400
 Glu Lys Gln Thr His Ala Gln Gln Val Gly Leu Met Asn Cys Met Ala
 405 410 415
 Gln Asn Val Leu Asn Thr Asp His Thr Leu His Ser Gly Val Ala Arg
 420 425 430
 Val Ser Ile Asp Tyr Lys Lys Tyr Asn Glu Asn Met Ala Lys Ser His
 435 440 445
 Leu Phe Gln Ser Tyr Thr Asn Thr Leu Leu Gln Gly Gln Thr Val Trp
 450 455 460
 Pro Asp His Asp Met Phe His Ser Ser Asp Thr Ile Cys Gly Ser Leu
 465 470 475 480
 Met Ala Arg Ser Lys Ala Ile Ser Gly Gly Pro Val Tyr Leu Ser Asp
 485 490 495
 Ser Pro Lys Glu Phe Val Lys Glu Asn Ile Phe Pro Leu Ile Asp Lys
 500 505 510
 Glu Gly Lys Ile Phe Arg Pro Glu Ala Pro Ala Ile Pro Thr Pro Glu
 515 520 525
 Ser Val Leu Thr Asn Pro Leu Gln Asp Gly Lys Ala Tyr Arg Val Phe
 530 535 540
 Ala Pro Thr Gly Asp Glu Ala Val Ser Val Ile Cys Tyr Asn Leu Asn
 545 550 555 560
 Thr Ser Pro Lys His Arg Lys Val Thr Ala Glu Ile Asp Pro Lys Asp
 565 570 575
 Tyr Leu Leu Arg Glu Thr Leu Thr Gly Lys Pro Thr Pro Gln Gln Lys
 580 585 590
 Arg Val Ile Leu Phe Asp Trp Asn Asn Gln Thr Ala Thr Glu Leu Thr
 595 600 605
 Gly Lys Gln Thr Val Glu Leu Asp Gly Phe Thr Asp Arg Leu Phe His
 610 615 620
 Leu Cys Pro Ile His Asp Gly Trp Ala Val Ile Gly Ile Gln Glu Lys
 625 630 635 640
 Tyr Leu Ser Pro Ala Ala Val Arg Ile Leu Ser Ser Thr Pro Asp Lys
 645 650 655
 Leu Val Leu Asn Val Leu Ser Pro Gly Thr Leu Lys Ile Trp Thr Glu
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 Lys Met Thr Ile Arg Lys
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 Asn Leu Val Phe Ile Met Ala Asp Gln Tyr Arg Gly Asp Ala Ile Gly
 35 40 45
 Cys Ile Gly Lys Glu Pro Val Lys Thr Pro His Leu Asp Lys Leu Ala
 50 55 60
 Ser Glu Gly Ile Asn Phe Thr Asn Ala Ile Ser Ser Tyr Pro Val Ser
 65 70 75 80
 Ser Pro Ala Arg Gly Met Leu Met Thr Gly Met Tyr Pro Ile Gly Ser

				85					90					95	
Lys	Val	Thr	Gly	Asn	Cys	Asn	Ser	Glu	Thr	Ala	Pro	Tyr	Gly	Val	Glu
			100					105					110		
Leu	Ser	Gln	Asn	Ala	Arg	Cys	Trp	Ser	Asp	Val	Leu	Lys	Asp	Gln	Gly
		115					120					125			
Tyr	Asn	Met	Gly	Tyr	Ile	Gly	Lys	Trp	His	Leu	Asp	Ala	Pro	Tyr	Lys
	130					135					140				
Pro	Tyr	Val	Asp	Thr	Tyr	Asn	Asn	Arg	Gly	Lys	Val	Ala	Trp	Asn	Glu
145					150					155					160
Trp	Cys	Pro	Pro	Glu	Arg	Arg	His	Gly	Phe	Asp	His	Trp	Ile	Ala	Tyr
				165					170					175	
Gly	Thr	Tyr	Asp	Tyr	His	Leu	Lys	Pro	Met	Tyr	Trp	Asn	Thr	Thr	Ala
			180					185					190		
Pro	Arg	Asp	Ser	Phe	Tyr	Tyr	Val	Asn	Gln	Trp	Gly	Pro	Glu	Tyr	Glu
	195						200					205			
Ala	Ser	Lys	Ala	Ile	Glu	Tyr	Ile	Asn	Lys	Gln	Lys	Asp	Gln	Lys	Gln
	210					215					220				
Pro	Phe	Ala	Leu	Val	Val	Ser	Met	Asn	Pro	Pro	His	Thr	Gly	Tyr	Glu
225					230					235					240
Leu	Val	Pro	Asp	Arg	Tyr	Lys	Glu	Ile	Tyr	Lys	Asp	Leu	Asp	Val	Glu
			245						250					255	
Ala	Leu	Cys	Lys	Gly	Arg	Pro	Asp	Ile	Pro	Ala	Lys	Gly	Thr	Glu	Met
			260					265					270		
Gly	Asp	Tyr	Phe	Arg	Asn	Asn	Ile	Arg	Asn	Tyr	Tyr	Ala	Cys	Ile	Thr
		275					280					285			
Gly	Val	Asp	Glu	Asn	Val	Gly	Arg	Ile	Ile	Glu	Ala	Leu	Lys	Gln	Asn
	290					295					300				
Asn	Leu	Phe	Asp	Asn	Thr	Ile	Val	Val	Phe	Thr	Ser	Asp	His	Gly	Ile
305					310					315					320
Cys	Met	Gly	Ala	His	Glu	Asn	Ala	Gly	Lys	Asp	Ile	Phe	Tyr	Glu	Glu
				325					330					335	
Ser	Met	Arg	Ile	Pro	Met	Ile	Leu	Ser	Trp	Pro	Asp	Gln	Ile	Lys	Pro
			340					345					350		
Arg	Lys	Ser	Asp	Pro	Leu	Met	Ile	Ala	Phe	Ala	Asp	Leu	Tyr	Pro	Thr
		355					360					365			
Leu	Leu	Ser	Met	Met	Gly	Phe	Ser	Lys	Glu	Ile	Pro	Glu	Thr	Val	Gln
	370				375						380				
Thr	Phe	Asp	Leu	Ser	Asn	Glu	Val	Leu	Thr	Gly	Lys	Asn	Lys	Lys	Asp
385					390					395					400
Leu	Val	Gln	Pro	Tyr	Tyr	Phe	Val	Lys	Phe	Asp	Asn	His	Ala	Thr	Gly
				405					410					415	
Tyr	Arg	Gly	Leu	Arg	Thr	Asp	Arg	Tyr	Thr	Tyr	Ala	Val	His	Ala	Thr
			420					425					430		
Asp	Gly	Lys	Ile	Asp	Asn	Val	Ile	Leu	Phe	Asp	Arg	Thr	Asn	Asp	Pro
		435					440					445			
His	Glu	Met	Asn	Asn	Ile	Ala	Ser	Gln	Gln	Leu	Lys	Leu	Thr	His	Thr
	450					455					460				
Phe	Asn	Arg	Gln	Leu	Lys	Thr	Trp	Leu	Glu	Lys	Thr	Asn	Asp	Pro	Phe
465					470					475					480
Ala	Gln	Tyr	Ile	Lys	Leu	Lys									
				485											

<210> 6034

<211> 128

<212> PRT

<213> B.fragilis

<400> 6034

Glu Ile Gly Met Lys Gln Asn Leu Lys Tyr Tyr Ile Ile Ile Val Leu

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1           5           10           15
Ala Val Leu Leu His Ser Val Thr Met Lys Ala Ala Asn Thr Ser Tyr
                20           25           30
Ile Ile Glu Asp Pro Asp Gln Glu Glu Cys Phe Ile Ser Gln Ala Thr
                35           40           45
Pro Ala Ser Arg Asn Ile Leu Glu Arg Phe His Phe Tyr Cys Thr Ile
                50           55           60
Met Pro Cys Glu Met Gly His Ala Asp Ile Ser His Val Pro Thr Asp
65           70           75           80
Lys Ser Phe Ile Arg Pro Glu Met Ile Phe His Lys Tyr Arg Met Arg
                85           90           95
Asn Asn Pro Phe Ser Val His Ser Asn His Ser His Thr Tyr Asn Pro
                100           105           110
Ser Asp Pro Leu Thr Tyr Tyr Val Tyr Gly Leu Arg Lys Ile Ile Ile
                115           120           125

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<210> 6035

<211> 105

<212> PRT

<213> B.fragilis

<400> 6035

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Asp Asp Met Met Ile His Met Glu Tyr Tyr Leu Val Val Ser Thr Ile
1           5           10           15
Met Met Phe Ala Gly Ile Tyr Gly Phe Phe Thr Arg Arg Asn Thr Leu
                20           25           30
Ala Ile Leu Ile Ser Val Glu Leu Met Leu Asn Ala Thr Asp Ile Asn
                35           40           45
Phe Ala Val Phe Asn Arg Phe Leu Phe Pro Gly Glu Leu Glu Gly Tyr
50           55           60
Phe Phe Ala Leu Phe Ser Ile Ala Ile Ser Ala Ala Glu Thr Ala Ile
65           70           75           80
Ala Ile Ala Ile Met Ile Asn Ile Tyr Arg Asn Ile Arg Ser Ile Gln
                85           90           95
Val Lys Asn Leu Asp Glu Leu Lys Trp
                100           105

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<210> 6036

<211> 1380

<212> PRT

<213> B.fragilis

<400> 6036

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Ile Ser Phe Val Cys Leu Gly Phe Ile Ser Phe Phe Cys Asn Lys Leu
1           5           10           15
Ile Ile Asn Met Lys Lys Leu Asn Leu Phe Leu Leu Val Leu Phe Ile
                20           25           30
Cys Asn Cys Pro Val Val Ser Gly Tyr Ala Phe Phe Asp Arg Asp Ile
35           40           45
Arg Leu Leu Thr Met Gln Asp Gly Leu Ala Asp Asn Thr Ile Thr Ser
50           55           60
Ile Tyr Lys Asp Arg Asp Gly Phe Met Trp Phe Gly Thr Asn Asn Gly
65           70           75           80
Leu Ser Arg Tyr Asp Gly Lys Leu Ile Lys Asn Phe Ser Ser Ser Pro
                85           90           95
Ala Tyr Met Tyr Val Ser Glu Ile Val Glu Met Ser Asp Arg Tyr Leu
                100           105           110
Gly Val Ile Ala Gly Asn Thr Leu Tyr Cys Phe Ala Arg Ser Leu Glu
                115           120           125

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Lys	Phe	Ile	Pro	Ile	Val	His	Ala	Thr	Asp	Tyr	Ser	Ser	Val	His	Val
130						135					140				
Ser	His	Leu	Leu	Pro	Ile	Asp	Asn	Asn	Ser	Phe	Trp	Gly	Leu	Ser	Gly
145					150					155					160
Asn	Lys	Leu	Tyr	Leu	Tyr	Thr	Gln	Glu	Glu	Val	Lys	Asn	Glu	Lys	Gly
				165					170						175
Glu	Val	Val	Gln	Ile	Lys	Leu	Lys	Cys	Glu	Lys	Gln	Tyr	Lys	Asp	Leu
			180					185					190		
Ile	Asp	Ser	Gly	Asp	Asn	Phe	Cys	Ala	Met	Cys	Tyr	Thr	Asp	Asn	His
	195					200						205			
Glu	Met	Leu	Cys	Leu	Val	Thr	Gln	Gln	Gly	Asn	Leu	Leu	Leu	Phe	Gln
	210					215				220					
Pro	Glu	Ser	Ser	Glu	Lys	Ser	Lys	Lys	Ile	Ser	Leu	Trp	Lys	Asn	Lys
225					230					235					240
Thr	Trp	Asp	Ala	Thr	Ser	Val	Leu	Tyr	Asp	Lys	Gly	Val	Val	Trp	Val
				245					250					255	
Ser	Thr	Ile	Gly	His	Gly	Ile	Leu	Arg	Tyr	Tyr	Val	Ser	Ser	Gly	Tyr
		260						265					270		
Ile	Asp	Arg	Ile	Thr	Tyr	Lys	Glu	Asn	Asn	Lys	Glu	Asn	Ser	Leu	Ser
	275						280					285			
His	Thr	Asp	Val	Phe	Gln	Val	Ile	Pro	Ile	Asn	Asn	Asn	Arg	Tyr	Leu
	290					295					300				
Ala	Val	Thr	Trp	Ser	Gly	Tyr	Thr	Leu	Leu	Phe	Gln	Asp	Lys	Asn	Asp
305					310					315					320
Pro	Lys	Arg	Met	Met	Thr	Glu	Ile	Tyr	Tyr	Asn	Thr	Ala	Ser	Gln	Leu
			325						330					335	
His	Arg	Asn	Leu	Glu	Thr	Arg	Met	Ile	Ser	Ala	Tyr	Tyr	Asp	Pro	Ser
		340					345						350		
Gly	Ile	Val	Trp	Ile	Gly	Thr	Asn	Gly	Gly	Gly	Val	Ile	Tyr	Ser	Asp
	355					360					365				
Leu	Arg	Ser	Gln	Phe	Tyr	Asn	Gln	Phe	His	Gln	Glu	Arg	His	Asn	Glu
	370					375					380				
Ile	Cys	Gly	Ile	Val	Met	Asp	Asn	Arg	Lys	Tyr	Val	Trp	Met	Ala	Thr
385					390					395					400
Phe	His	Gln	Gly	Ile	Met	Lys	Ser	Glu	Gln	Pro	Phe	Glu	Pro	Gly	Arg
			405						410					415	
Arg	Met	Asn	Phe	Thr	Arg	Val	Gly	Thr	Pro	Asp	Ile	Gln	Ser	Lys	Asn
		420						425					430		
Thr	Val	Leu	Cys	Ala	Ile	Asn	Asp	Asn	Arg	Gly	Ser	Leu	Trp	Phe	Gly
	435					440						445			
Asn	Arg	Asp	Gly	Thr	Leu	Thr	Ser	Tyr	Asn	Glu	Ala	Thr	Lys	Gln	Phe
	450					455				460					
Arg	Leu	His	Phe	Leu	Gln	Asp	Arg	Gly	Lys	Val	Asn	Thr	Val	Ser	Ile
465					470					475					480
Trp	Ala	Leu	Tyr	Trp	Asp	Thr	Asn	Arg	Asn	Leu	Trp	Val	Gly	Thr	Asn
			485					490						495	
Asp	Gly	Val	Trp	Lys	Leu	Asn	Ile	Asp	Ser	Gly	Phe	Cys	Lys	Lys	Ile
		500						505					510		
Pro	Ile	Glu	Ile	Leu	Phe	Lys	Asp	Pro	Thr	Pro	Ile	Cys	Ile	Arg	Ala
	515						520					525			
Ile	Ala	Gly	Thr	Lys	Asp	Gly	Thr	Ile	Trp	Leu	Gly	Thr	Ser	Asn	Ala
	530					535					540				
Gly	Val	Cys	Lys	Leu	Lys	Ile	Asp	Ser	Arg	Gly	Glu	Met	Ser	Leu	Glu
545					550					555					560
Thr	Gly	Tyr	Glu	Lys	Lys	Ala	Asn	Ile	Lys	Asn	Asn	Ser	Val	Arg	Ser
			565					570						575	
Leu	Leu	Val	Ser	Ser	Asp	Gly	Asn	Val	Tyr	Val	Gly	Tyr	Met	Asp	Gly
		580						585					590		
Phe	Ala	Ile	Leu	Ser	Pro	Lys	Lys	Asp	Ala	Ile	Arg	Glu	Tyr	Tyr	Thr

130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590

		595					600					605				
Thr	Arg	Asn	Gly	Leu	Cys	Ser	Asn	Phe	Ile	Gly	Cys	Leu	Val	Glu	Asp	
	610					615					620					
Asn	Arg	Gly	His	Ile	Trp	Leu	Gly	Ser	Asn	Ser	Gly	Val	Ser	Arg	Tyr	
625					630					635					640	
Ser	Arg	His	Gln	His	Leu	Phe	Tyr	Asn	Tyr	Tyr	Ile	Ser	Gly	Ser	Asn	
				645					650					655		
Arg	Ser	Ala	Leu	Leu	Ala	Asp	Asn	Thr	Leu	Phe	Phe	Gly	Asn	Asn	Lys	
			660					665					670			
Ser	Leu	Thr	Tyr	Phe	Asp	Pro	Asp	Asp	Val	Gly	Gly	His	Leu	Asp	Glu	
		675					680					685				
Asp	Gln	Val	Leu	Ile	Thr	Gly	Leu	Glu	Val	Asp	Gly	Arg	Pro	Val	Gly	
	690					695					700					
Ile	Gly	Asp	Lys	Ile	Asn	Gly	Gln	Thr	Val	Leu	Ala	Glu	Gly	Ile	Ser	
705					710					715					720	
Tyr	Thr	Ser	Ser	Ile	Thr	Leu	Asn	Asn	Glu	Asn	Arg	Asp	Phe	Val	Leu	
				725					730					735		
Ser	Phe	Asn	Asn	Leu	Ser	Tyr	Ala	Glu	Glu	Gln	Gln	Lys	Tyr	Asn	Tyr	
			740					745					750			
Arg	Leu	Leu	Pro	Tyr	Gln	Thr	His	Trp	Leu	Val	Ser	Asn	Asp	Gly	Glu	
		755					760					765				
Lys	Ala	Thr	Tyr	Met	Asn	Leu	Pro	Glu	Gly	Asp	Tyr	Thr	Phe	Glu	Val	
	770					775					780					
Lys	Asn	Ile	Tyr	Pro	Asp	Gly	Lys	Asp	Gly	Lys	Val	Thr	Ser	Leu	Gln	
785					790					795					800	
Ile	His	Ile	Leu	Pro	His	Trp	Ser	Arg	Thr	Leu	Pro	Phe	Arg	Leu	Phe	
				805					810					815		
Ile	Leu	Leu	Leu	Leu	Ala	Gly	Gly	Val	Ala	Tyr	Leu	Ile	Arg	Leu	Val	
			820					825					830			
Lys	His	Arg	Gln	Met	Arg	Met	Glu	Arg	Glu	Met	Arg	Met	Glu	His	Glu	
		835					840					845				
Leu	Leu	Ser	Val	Asn	Leu	Glu	Arg	Glu	Lys	Glu	Arg	Gln	Ile	Arg	Met	
	850					855					860					
Glu	Arg	Glu	Asn	Phe	Phe	Thr	Ser	Ala	Ala	His	Glu	Leu	Arg	Thr	Pro	
865				870						875					880	
Leu	Thr	Leu	Ile	Leu	Ala	Pro	Leu	Gln	Glu	Leu	Leu	Glu	His	Ile	Lys	
			885						890					895		
Ala	Ser	Asp	Pro	Leu	Tyr	Ser	Lys	Leu	Tyr	Thr	Met	Tyr	Lys	Asn	Ser	
			900					905					910			
Ser	Ser	Leu	His	Thr	Leu	Val	Asp	Gln	Leu	Leu	Tyr	Val	Gln	Lys	Ile	
		915					920					925				
Glu	Ala	Gly	Met	Val	Lys	Leu	Arg	Leu	Ser	Glu	Ala	Asp	Ile	Val	Glu	
	930					935					940					
Leu	Val	Arg	Glu	Val	Ala	Glu	Ser	Phe	Arg	Gln	Met	Ala	Gly	Ile	Lys	
945					950				</							

Ile Leu Asp Ser Glu Pro Gly Lys Gly Ser Thr Phe Val Leu Leu Ile
 1075 1080 1085
 Pro Glu Gly Lys Ser His Phe Thr Gly Asp Leu Tyr Glu Ile Val Asp
 1090 1095 1100
 Tyr Arg Gly His Glu Thr Glu Pro Gln Phe Gln Pro Leu Ser Val Gln
 1105 1110 1115 1120
 Glu Lys Ser Glu Glu Gly Val Pro Val Thr Lys Lys Thr Leu Leu Ile
 1125 1130 1135
 Val Glu Asp Asn Val Asp Val Arg Gln Tyr Ile Arg Ser Leu Phe Val
 1140 1145 1150
 Thr Lys Tyr Thr Val Leu Glu Ala Ala Asp Gly Glu Glu Gly Val Arg
 1155 1160 1165
 Ile Ala Thr Asn Glu Ile Pro Asp Leu Ile Ile Ser Asp Val Met Met
 1170 1175 1180
 Pro Val Lys Asp Gly Phe Ala Cys Cys Arg Glu Ile Arg Glu Arg Gln
 1185 1190 1195 1200
 Glu Thr Ala His Ile Pro Ile Leu Met Leu Thr Ala Lys Ala Glu Asp
 1205 1210 1215
 Ala Asp Val Leu Gln Gly Ser Tyr Ser Gly Ala Asp Asp Tyr Met Met
 1220 1225 1230
 Lys Pro Phe Asn Pro Glu Val Leu Lys Ala Lys Val Glu Asn Leu Ile
 1235 1240 1245
 Leu Gln Arg Glu Arg Leu Lys Arg Ile Tyr Thr Lys Ala Leu Met Leu
 1250 1255 1260
 Lys Arg Glu Ser Val Glu Asp Glu Glu Ala Asp Asp Glu Phe Ile Gln
 1265 1270 1275 1280
 Lys Leu Ile His Val Val Glu Lys Asn Leu Ser Asn Glu Asn Phe Asn
 1285 1290 1295
 Val Lys Met Leu Ala Glu Gln Leu His Met Ser Gln Pro Thr Leu Tyr
 1300 1305 1310
 Arg Lys Val Lys Gln Arg Ser Glu Leu Ser Val Val Asp Met Ile Arg
 1315 1320 1325
 Ser Val Arg Val Ser Lys Ala Ala Ser Leu Ile Met Glu Asn Arg Tyr
 1330 1335 1340
 Ser Ile Gln Glu Ile Ser Glu Lys Val Gly Phe Ser Asp Ala Arg Thr
 1345 1350 1355 1360
 Leu Arg Lys His Phe Thr Glu Gln Phe Gly Val Pro Pro Ser Lys Tyr
 1365 1370 1375
 Met Glu Asn Lys
 1380

<210> 6037
 <211> 421
 <212> PRT
 <213> B.fragilis

<400> 6037
 Asn Val Asn Val Met Asn Arg Ser Arg Asp Lys Val Arg Cys Ala Leu
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 Asn His Gln Asn Ala Gly Ser Ile Pro Val Asp Phe Gly Ser Thr Ala
 20 25 30
 Val Thr Gly Ile His Cys Arg Ile Val Glu Ala Leu Arg Asn Tyr Tyr
 35 40 45
 Gly Leu Ala Pro Arg Pro Val Lys Ile Val Asp Ala Phe Gln Met Leu
 50 55 60
 Gly Glu Ile Asp Ala Glu Leu Ala Glu Lys Ile Gly Val Asp Cys Ile
 65 70 75 80
 Gly Ile Gly Gly Pro Lys Asp Ile Phe Asp Leu Asp Thr Thr Arg Met
 85 90 95

His Glu Gln Thr Thr Pro Trp Gly Gln Arg Val Leu Val Pro Glu Ala
 100 105 110
 Met Asp Leu Thr Pro Asp Met Arg Gly Asp Val Tyr Val Tyr Ala Gly
 115 120 125
 Gly Asp Gln Asn Tyr Pro Pro Ser Ala Val Met Pro Lys Gly Cys Tyr
 130 135 140
 Phe Ile Asn Ala Ile Glu Arg Gln Gln Pro Ile Glu Glu Asp Arg Leu
 145 150 155 160
 Asp Pro Glu Asp Asn Val Glu Glu Phe Gly Leu Leu Thr Glu Asn Asp
 165 170 175
 Leu Ala Tyr Tyr Cys Ala Glu Ala Asp Lys Ala Tyr Gln Thr Gly Arg
 180 185 190
 Ala Val Val Ala Ser Phe Gly Gly Thr Ala Leu Gly Asp Val Ala Phe
 195 200 205
 Val Pro Gly Met Gly Leu Lys Gln Pro Lys Gly Ile Arg Ser Val Val
 210 215 220
 Glu Trp Tyr Met Ser Thr Ala Met Arg Gln Asp Tyr Leu His Gln Val
 225 230 235 240
 Phe Glu Lys Glu Ile Asp Ile Ala Ile Ala Asn Tyr Glu Lys Leu Trp
 245 250 255
 Ala Ala Leu Gly Asp Lys Ile Asp Val Val Leu Thr Cys Gly Thr Asp
 260 265 270
 Phe Gly Ser Gln Glu Ser Gln Phe Cys Ser Ile Asp Thr Phe Arg Glu
 275 280 285
 Leu Trp Leu Pro His Tyr Arg Arg Met Asn Asp Trp Ile His Gln His
 290 295 300
 Thr Thr Trp Lys Ile Phe Lys His Ser Cys Gly Ala Ile Ile Pro Ile
 305 310 315 320
 Leu Pro Gly Leu Ile Glu Ala Gly Phe Asp Ile Ile Asn Pro Val Gln
 325 330 335
 Ile Asn Ala Lys Asp Met Glu Ser Arg Arg Leu Lys Glu Glu Phe Gly
 340 345 350
 Ser Gln Leu Thr Phe Trp Gly Gly Gly Val Asp Thr Gln Lys Ile Leu
 355 360 365
 Pro Phe Gly Thr Pro Asp Glu Ile Arg Arg His Val Met Gly Gln Cys
 370 375 380
 Glu Ile Leu Gly Arg Asp Gly Gly Phe Val Phe Asn Ala Val His Asn
 385 390 395 400
 Val Gln Ala Asn Val Pro Val Asp Asn Val Val Ala Met Phe Asp Ala
 405 410 415
 Leu Lys Asp Ile Ser
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<210> 6038

<211> 384

<212> PRT

<213> B.fragilis

<400> 6038

Ser Gly Met Val Met Asn Thr Phe Val Thr Phe Lys Ile Glu Asp Ala
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 Met Lys Thr Phe Arg Tyr Ile Leu Phe Val Trp Val Met Leu Gly Cys
 20 25 30
 Gly Leu Phe Ala Ser Cys Glu Asp Glu Val Glu Tyr Ala Pro Leu
 35 40 45
 Ala Val Thr Arg Val Ser Thr Val Leu Asp Arg Glu Gln Gly Ile Asp
 50 55 60
 Gln Ala Asn Leu Ala Gln Tyr Ile Ile Val Gln Gly Thr Gly Leu Asn
 65 70 75 80

Ala Val Asn Ser Ile Leu Val Asn Asp Val Gln Val Asp Leu Lys Asp
 85 90 95
 Ala Tyr Ile Thr Ser Gly Glu Ile Thr Phe Pro Ile Pro Arg Val Ile
 100 105 110
 Pro Gly Glu Ile Asn Asn Leu Ile Thr Leu Gly Ser Gly Asn Ser Thr
 115 120 125
 Val Thr Ala Pro Ile Ser Val Phe Ile Pro Glu Leu Glu Val Asn Gly
 130 135 140
 Met Phe Asn Glu Phe Thr Pro Ala Gly Asp Thr Met Lys Val Val Gly
 145 150 155 160
 Asp Tyr Phe Asp Leu Tyr Glu Ile Thr Thr Glu Ser Gly Gln Leu Phe
 165 170 175
 Phe Gly Gly Lys Glu Val Lys Ile Thr Lys Ser Thr Gly Asn Ser Leu
 180 185 190
 Ser Phe Val Leu Pro Glu Asp Ala Val Met Gly Ser Lys Ile Lys Leu
 195 200 205
 Val Ser Pro Val Cys Gly Glu Val Thr Val Pro Gly Lys Tyr Met Glu
 210 215 220
 Lys Gly Asn Met Leu Cys Asp Phe Asp Pro Phe Thr Gly Trp Gly Gly
 225 230 235 240
 Ser Lys Tyr Val Ile Asp Gly Pro Val Pro Ala Pro Tyr Ser Gly Tyr
 245 250 255
 Phe Ser Arg Phe Lys Ile Asn Lys Gly Asp Ala Asn Asp Trp Asp Trp
 260 265 270
 Asn Glu Val Thr Thr Ile Ala Gln Cys Ala Val Glu Tyr Ser Pro Glu
 275 280 285
 Val Ile Ala Asp Gln Asn Lys Tyr Leu Leu Lys Phe Glu Val Asn Thr
 290 295 300
 Ile Lys Pro Leu Thr Lys Arg Gln Ile Arg Phe Tyr Phe Ser Gln Ile
 305 310 315 320
 Asn Tyr Asp Trp Glu Pro Phe Ala Ser Gly Leu Ala Leu Asn Thr Asn
 325 330 335
 Gly Glu Trp Lys Thr Val Ser Ile Asp Leu Gly Glu Met Trp Lys Gly
 340 345 350
 Asp Ile Pro Asn Asp Gly Val Leu Gln Ile Met Gly Asn Ser Trp Ala
 355 360 365
 Glu Asp Thr Asp Ile Cys Phe Asp Asn Phe Arg Ile Val Pro Lys Asp
 370 375 380

<210> 6039

<211> 686

<212> PRT

<213> B.fragilis

<400> 6039

Val His Lys Val Val Ser Pro Pro Pro Phe Pro Leu Leu Leu Ile Lys
 1 5 10 15
 Phe Pro Ile Lys Lys Met Leu Leu Pro Leu Ser Phe Thr Lys Phe Ala
 20 25 30
 Phe Lys Phe Ala Arg Ile Met Lys Asn Glu Pro Thr Tyr Ser Leu Leu
 35 40 45
 Asn Ala Ile Asn Tyr Pro Lys Asp Leu Arg Gln Leu Ser Val Asp Gln
 50 55 60
 Leu Pro Glu Val Cys Glu Leu Arg Gln Asp Ile Ile Lys Glu Leu
 65 70 75 80
 Ser Cys Asn Pro Gly His Phe Ala Ala Ser Leu Gly Val Val Glu Leu
 85 90 95
 Thr Val Ala Leu His Tyr Val Tyr Asn Thr Pro Tyr Asp Arg Ile Val
 100 105 110

Trp	Asp	Val	Gly	His	Gln	Ala	Tyr	Gly	His	Lys	Ile	Leu	Thr	Gly	Arg
	115						120					125			
Arg	Glu	Ala	Phe	Ser	Thr	Asn	Arg	Lys	Leu	Gly	Gly	Ile	Arg	Pro	Phe
	130					135					140				
Pro	Ser	Pro	Glu	Glu	Ser	Glu	Tyr	Asp	Thr	Phe	Thr	Cys	Gly	His	Ala
145					150					155					160
Ser	Asn	Ser	Ile	Ser	Ala	Ala	Leu	Gly	Met	Ala	Val	Ala	Ala	Glu	Arg
			165						170					175	
Lys	Gly	Glu	Lys	Asp	Arg	His	Val	Val	Ala	Val	Ile	Gly	Asp	Gly	Ser
			180					185					190		
Met	Ser	Gly	Gly	Leu	Ala	Phe	Glu	Gly	Leu	Asn	Asn	Ala	Ser	Ser	Thr
	195						200					205			
Ala	Asn	Asn	Leu	Leu	Ile	Ile	Leu	Asn	Asp	Asn	Asp	Met	Ala	Ile	Asp
	210					215					220				
Arg	Ser	Val	Gly	Gly	Met	Lys	Gln	Tyr	Leu	Phe	Asn	Leu	Thr	Thr	Ser
225					230					235					240
Asn	Arg	Tyr	Asn	Gln	Leu	Arg	Phe	Lys	Thr	Ser	Arg	Leu	Leu	Phe	Lys
			245						250					255	
Met	Gly	Leu	Leu	Asn	Glu	Glu	Arg	Arg	Lys	Ala	Leu	Ile	Arg	Leu	Gly
		260						265					270		
Asn	Ser	Leu	Lys	Ser	Leu	Ala	Ala	Gln	Gln	Gln	Asn	Ile	Phe	Glu	Gly
	275						280					285			
Met	Asn	Ile	Arg	Tyr	Phe	Gly	Pro	Ile	Asp	Gly	His	Asp	Val	Lys	Asn
	290					295					300				
Ile	Ala	Arg	Ile	Leu	His	Asp	Ile	Lys	Asp	Met	Gln	Gly	Pro	Lys	Ile
305					310					315					320
Leu	His	Leu	His	Thr	Ile	Lys	Gly	Lys	Gly	Phe	Gly	Pro	Ala	Glu	Lys
			325						330					335	
Gln	Ala	Thr	Ile	Trp	His	Ala	Pro	Gly	Lys	Phe	Asp	Pro	Val	Thr	Gly
		340						345					350		
Lys	Arg	Ile	Val	Ala	Asn	Thr	Asp	Gly	Met	Pro	Pro	Leu	Phe	Gln	Asp
	355						360					365			
Val	Phe	Gly	His	Thr	Leu	Val	Glu	Leu	Ala	Glu	Lys	Asn	Lys	Arg	Ile
	370					375					380				
Met	Gly	Val	Thr	Pro	Ala	Met	Pro	Ser	Gly	Cys	Ser	Met	Asn	Met	Leu
385					390					395					400
Met	Asp	Arg	Met	Pro	Asp	Arg	Ala	Phe	Asp	Val	Gly	Ile	Ala	Glu	Gly
			405						410					415	
His	Ala	Val	Thr	Phe	Ser	Gly	Gly	Met	Ala	Lys	Asp	Gly	Leu	Leu	Pro
			420					425					430		
Phe	Cys	Asn	Ile	Tyr	Ser	Ser	Phe	Met	Gln	Arg	Ala	Tyr	Asp	Asn	Ile
		435					440					445			
Ile	His	Asp	Val	Ala	Ile	Gln	Lys	Leu	Asn	Val	Val	Phe	Cys	Leu	Asp
	450					455					460				
Arg	Ala	Gly	Leu	Val	Gly	Glu	Asp	Gly	Pro	Thr	His	His	Gly	Val	Phe
465					470					475					480
Asp	Met	Ala	Tyr	Leu	Arg	Pro	Ile	Pro	Asn	Leu	Thr	Ile	Ser	Ser	Pro
			485						490					495	
Met	Asp	Glu	His	Glu	Leu	Arg	Arg	Leu	Met	Tyr	Thr	Ala	Gln	Leu	Pro
		500						505					510		
Asp	Lys	Gly	Pro	Phe	Ala	Ile	Arg	Tyr	Pro	Arg	Gly	Arg	Gly	Ser	Leu
	515						520					525			
Val	Asp	Trp	Glu	Cys	Pro	Leu	Glu	Glu	Ile	Pro	Val	Gly	Lys	Gly	Arg
	530					535					540				
Lys	Leu	Lys	Asp	Gly	Asn	Asp	Leu	Ala	Val	Ile	Thr	Ile	Gly	Pro	Ile
545					550					555					560
Gly	Lys	Leu	Ala	Ala	Arg	Ala	Ile	Glu	Arg	Ala	Glu	Ala	Asp	Thr	Gly
			565					570					575		
Ile	Ser	Val	Ala	His	Tyr	Asp	Leu	Arg	Phe	Leu	Lys	Pro	Leu	Asp	Glu

[illegible]

<400> 6040

Ser 1	Ile	Lys	Leu	Asn 5	Ser	Ser	Tyr	Tyr	Trp 10	Ile	Lys	Ser	Asn	Asn 15	Val
Tyr	Phe	Trp	Ser 20	Glu	Ile	Lys	Pro	Glu 25	Asn	Phe	Lys	Ser	Asn 30	Ser	Met
Ser	Thr	Leu 35	Gln	Asn	Ala	Met	Gly 40	Lys	Met	Thr	Asn 45	Tyr	Arg	Trp	Thr
Ile	Cys 50	Ala	Met	Leu	Phe	Phe 55	Ala	Thr	Thr	Ile	Asn 60	Tyr	Leu	Asp	Arg
Gln 65	Val	Leu	Ser	Leu 70	Thr	Trp	Asp	Glu	Phe	Ile 75	Lys	Pro	Glu	Phe	His
Trp	Asn	Glu	Ser	His 85	Tyr	Gly	Ile	Ile	Thr 90	Ala	Val	Phe	Ser	Ile 95	Val
Tyr	Ala	Ile	Cys 100	Met	Leu	Phe	Ala	Gly 105	Arg	Phe	Ile	Asp	Trp 110	Met	Gly
Thr	Lys	Lys 115	Gly	Tyr	Leu	Trp	Ser 120	Ile	Gly	Ile	Trp	Ser 125	Ala	Gly	Ala
Cys	Leu 130	His	Ala	Phe	Cys	Gly 135	Ile	Ile	Thr	Glu	Glu 140	Tyr	Val	Gly	Met
His 145	Ser	Ala	Ala	Glu 150	Leu	Ile	Ala	Ala	Thr	Gly 155	Asp	Val	Val	Val	Val
Leu	Ala	Thr	Ile	Ser 165	Met	Tyr	Cys	Phe	Leu 170	Val	Ala	Arg	Cys	Ile 175	Leu
Ala	Leu	Gly	Glu 180	Ala	Gly	Asn	Phe	Pro 185	Ala	Ala	Ile	Lys	Val 190	Thr	Ala
Glu	Tyr	Phe 195	Pro	Lys	Lys	Asp	Arg 200	Ala	Tyr	Ala	Thr	Ser 205	Ile	Phe	Asn
Ala	Gly 210	Ala	Ser	Ile	Gly	Ala 215	Leu	Ile	Ala	Pro	Leu 220	Ser	Ile	Pro	Leu
Leu 225	Ala	Lys	Ala	Trp 230	Gly	Trp	Glu	Met	Ala	Phe 235	Val	Ile	Ile	Gly	Ala
Leu	Gly	Phe	Val	Trp 245	Met	Gly	Phe	Trp	Val 250	Phe	Met	Tyr	Thr	Ala 255	Pro
Ser	Lys	Asn	Lys 260	Phe	Val	Asn	Ser	Ala 265	Glu	Leu	Glu	Tyr	Ile 270	Glu	Gln
Asp	Lys	His 275	Glu	Thr	Tyr	Thr	Ala 280	Thr	Val	Lys	Glu	Asn 285	Glu	Glu	Lys
Lys	Ser 290	Met	Thr	Phe	Arg	Gln 295	Cys	Phe	Thr	Tyr	Arg 300	Gln	Thr	Trp	Ala
Phe	Ala	Phe	Gly	Lys	Phe	Met	Thr	Asp	Gly	Val	Trp	Trp	Phe	Phe	Leu

305					310					315				320	
Phe	Trp	Ala	Pro	Ser	Tyr	Leu	Asn	Thr	Gln	Phe	Asp	Ile	Lys	Thr	Ser
				325					330					335	
Glu	Gly	Leu	Gly	Arg	Ala	Leu	Ile	Phe	Thr	Leu	Tyr	Ala	Ile	Thr	Met
			340					345					350		
Leu	Ser	Ile	Tyr	Gly	Gly	Lys	Leu	Pro	Thr	Ile	Ile	Ile	His	Lys	Thr
		355				360						365			
Gly	Leu	Asn	Pro	Tyr	Ala	Ala	Arg	Met	Arg	Ala	Met	Leu	Ile	Phe	Ala
	370					375					380				
Phe	Phe	Pro	Leu	Leu	Val	Leu	Leu	Ala	Gln	Pro	Leu	Gly	Thr	Ile	Ser
385					390					395					400
Pro	Trp	Phe	Pro	Val	Ile	Met	Ile	Gly	Ile	Gly	Gly	Ala	Ala	His	Gln
			405						410					415	
Ser	Trp	Ser	Ala	Asn	Ile	Phe	Ser	Thr	Val	Gly	Asp	Met	Phe	Pro	Lys
			420					425					430		
Ser	Ala	Ile	Ala	Ser	Ile	Thr	Gly	Ile	Gly	Gly	Met	Ala	Gly	Gly	Val
		435					440					445			
Gly	Ser	Met	Ile	Leu	Gln	Tyr	Ser	Ala	Gly	Glu	Leu	Phe	Val	His	Ala
	450					455					460				
Asp	Lys	Thr	Gln	Met	Val	Phe	Met	Gly	Phe	Ile	Gly	Lys	Pro	Ala	Gly
465					470					475					480
Tyr	Phe	Val	Ile	Phe	Cys	Ile	Cys	Ser	Val	Ala	Tyr	Leu	Ile	Gly	Trp
				485					490					495	
Ile	Val	Met	Lys	Ala	Leu	Val	Pro	Lys	Tyr	Lys	Pro	Ile	Ile	Leu	Asn
			500					505					510		

<210> 6041

<211> 820

<212> PRT

<213> B.fragilis

<400> 6041

Pro	Asp	Asn	Ser	Glu	Thr	Met	Lys	Met	Lys	Leu	Ile	Cys	Phe	Leu	Met
1				5					10					15	
Leu	Ser	Val	Phe	Phe	Ile	Phe	Pro	Val	Arg	Ala	Lys	Asn	Thr	Phe	Gly
			20					25					30		
Lys	Lys	Lys	Asp	Lys	Val	Thr	Arg	Leu	His	Phe	Tyr	Asp	Leu	Asn	Lys
		35					40					45			
Asn	Gly	Arg	Met	Asp	Thr	Tyr	Glu	Asn	Pro	Ser	Ala	Pro	Val	Glu	Tyr
	50					55					60				
Arg	Val	Glu	His	Leu	Leu	Ser	Gln	Met	Thr	Leu	Glu	Glu	Lys	Val	Gly
65					70					75					80
Gln	Met	Leu	Thr	Ser	Leu	Gly	Trp	Pro	Met	Tyr	Glu	Arg	Val	Gly	Glu
				85					90					95	
Asp	Ile	Arg	Leu	Thr	Pro	Gln	Leu	Glu	Lys	Glu	Ile	Gly	Glu	Tyr	His
			100					105					110		
Ile	Gly	Ser	Leu	Trp	Gly	Val	Met	Arg	Ala	Asp	Pro	Trp	Thr	Gln	Arg
		115					120					125			
Thr	Leu	His	Thr	Gly	Leu	Asn	Pro	Ser	Leu	Ala	Ala	Arg	Ala	Ser	Asn
	130					135					140				
Arg	Leu	Gln	Ser	Tyr	Val	Ile	Glu	His	Ser	Arg	Leu	Gly	Ile	Pro	Leu
145					150					155					160
Phe	Leu	Ala	Glu	Glu	Cys	Pro	His	Gly	His	Met	Ala	Ile	Gly	Ala	Thr
				165					170					175	
Val	Cys	Pro	Thr	Ser	Ile	Gly	Gln	Ala	Ser	Thr	Trp	Asn	Pro	Glu	Leu
			180					185					190		
Ile	Arg	Gln	Met	Gly	Arg	Val	Ile	Ala	Ile	Glu	Ala	Ser	Ala	Gln	Gly
		195					200					205			
Ala	His	Ile	Gly	Tyr	Gly	Pro	Val	Leu	Asp	Leu	Ala	Arg	Asp	Pro	Arg

210	215	220
Trp Ser Arg Val Glu Glu Thr Tyr Gly Glu Asp Pro Tyr Leu Asn Gly		
225	230	235
Val Met Gly Thr Ala Leu Val Arg Gly Phe Gln Gly Glu Thr Leu Asn		240
	245	250
Asp Gly Lys Ser Val Ile Ala Thr Leu Lys His Phe Ala Ser Tyr Gly		255
	260	265
Trp Thr Glu Gly Gly His Asn Gly Thr Ala His Ile Gly Glu Arg		270
	275	280
Glu Leu Glu Glu Ala Ile Phe Pro Pro Phe Arg Glu Ala Val Gly Ala		285
	290	295
Gly Ala Leu Ser Val Met Ser Ser Tyr Asn Glu Ile Asp Gly Asn Pro		300
305	310	315
Cys Thr Gly Ser Arg Tyr Leu Leu Thr Asp Ile Leu Lys Asp Arg Trp		320
	325	330
Gln Phe Lys Gly Phe Val Val Ser Asp Leu Tyr Ala Val Gly Gly Leu		335
	340	345
Arg Glu His Gly Val Ala Gly Asn Asp Tyr Glu Ala Ala Ile Lys Ala		350
	355	360
Val Asn Ala Gly Val Asp Ser Asp Leu Gly Thr Asn Val Tyr Ala Glu		365
	370	375
Gln Leu Val Ala Ala Val Lys Arg Gly Asp Val Ala Val Ala Thr Ile		380
385	390	395
Asp Lys Ala Val Arg Arg Ile Leu Ser Leu Lys Phe Gln Met Gly Leu		400
	405	410
Phe Asp Asp Pro Phe Val Asp Glu Lys Gln Ala Val Gln Leu Ile Ala		415
	420	425
Ser Ser Glu His Thr Gly Leu Ala Arg Glu Val Ala Arg Gln Ser Ile		430
	435	440
Val Leu Leu Lys Asn Lys Asp Lys Leu Leu Pro Leu Lys Lys Asp Ile		445
	450	455
Arg Thr Leu Ala Val Ile Gly Pro Asn Ala Asp Asn Val Tyr Asn Met		460
465	470	475
Leu Gly Asp Tyr Thr Ala Pro Gln Ala Asp Gly Thr Val Val Thr Val		480
	485	490
Leu Asp Gly Ile Arg Gln Lys Val Ser Lys Glu Thr Arg Val Leu Tyr		495
	500	505
Ala Lys Gly Cys Ala Val Arg Asp Ser Ser Arg Thr Gly Phe Lys Asp		510
	515	520
Ala Ile Glu Thr Ala Arg Asn Ala Asp Ala Val Val Met Val Met Gly		525
	530	535
Gly Ser Ser Ala Arg Asp Phe Ser Ser Glu Tyr Glu Glu Thr Gly Ala		540
545	550	555
Ala Lys Val Thr Ile Asn Gln Ile Ser Asp Met Glu Ser Gly Glu Gly		560
	565	570
Tyr Asp Arg Ala Thr Leu His Leu Met Gly Arg Gln Leu Glu Leu Leu		575
	580	585
Glu Glu Ile Ser Arg Leu Gly Lys Pro Val Val Leu Val Leu Ile Lys		590
	595	600
Gly Arg Pro Leu Leu Met Glu Gly Ala Ile Gln Glu Ala Glu Ala Ile		605
	610	615
Val Asp Ala Trp Tyr Pro Gly Met Gln Gly Gly Asn Ala Val Ala Asp		620
625	630	635
Val Leu Phe Gly Asp Tyr Asn Pro Ala Gly Arg Leu Thr Leu Ser Val		640
	645	650
Pro Arg Ser Val Gly Gln Leu Pro Val Tyr Tyr Asn Thr Arg Arg Lys		655
	660	665
Gly Asn Arg Ser Arg Tyr Ile Glu Glu Pro Gly Thr Pro Arg Tyr Pro		670
	675	680
		685

210 215 220
 225 230 235
 240 245 250
 255 260 265
 270 275 280
 285 290 295
 300 305 310
 315 320 325
 330 335 340
 345 350 355
 360 365 370
 375 380 385
 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475
 480 485 490
 495 500 505
 510 515 520
 525 530 535
 540 545 550
 555 560 565
 570 575 580
 585 590 595
 600 605 610
 615 620 625
 630 635 640
 645 650 655
 660 665 670
 675 680 685

Phe Gly Tyr Gly Leu Ser Tyr Thr Thr Phe Ser Tyr Thr Asp Met Lys
 690 695 700
 Val Gln Val Thr Glu Gly Ser Asp Asp Cys Arg Val Asp Val Thr Val
 705 710 715 720
 Thr Ile Gln Asn Gln Gly Thr Ala Asp Gly Asp Glu Met Ala Gln Leu
 725 730 735
 Tyr Phe Arg Asp Asp Val Ser Ser Phe Thr Thr Pro Ala Lys Gln Leu
 740 745 750
 Arg Ala Phe Ser Arg Ile His Leu Lys Ala Gly Glu Ser Arg Glu Val
 755 760 765
 Thr Phe Thr Leu Asp Lys Lys Ser Leu Ala Leu Tyr Met Gln Glu Gly
 770 775 780
 Glu Trp Val Val Glu Pro Gly Arg Phe Thr Ile Met Val Gly Gly Ser
 785 790 795 800
 Ser Glu Asp Ile Ala Cys Arg Gln Ala Phe Glu Ile Asn Arg Lys Tyr
 805 810 815
 Thr Phe Lys Met
 820

<210> 6042

<211> 554

<212> PRT

<213> B.fragilis

<400> 6042

Val Leu Phe Arg Glu Ile Asn Arg Gly Pro Asp Leu Pro Glu Glu Phe
 1 5 10 15
 Lys Glu Thr Ile Tyr Lys Thr Ser Pro Ile Ile Pro Pro Gly Gly His
 20 25 30
 Leu Pro Ile Gln Pro Lys Lys Gly Tyr Ser Asn Leu Pro Arg Ile Phe
 35 40 45
 Ser Val Arg Ile Glu Thr Thr Ser Pro Ile Tyr Thr Asp Lys Gly Ser
 50 55 60
 Lys Thr Ile Ala Ser Thr Leu Pro Gly Asn Arg Ala His Ser Phe Asp
 65 70 75 80
 Gly Trp Ile Thr Ser Thr Gly Arg Ile Ser Ala Asn Ala Pro Lys Ala
 85 90 95
 Gly Pro Pro Arg Pro Val Val Thr Asp Gly Val Tyr Arg Arg Thr Glu
 100 105 110
 Lys Leu Asn Ile Thr Ser Val Ser Thr Glu Ser Gly Ile Val Cys Asn
 115 120 125
 Ile Gly Phe Asp Glu Ser Leu Met Tyr Glu Ala Trp Lys Asn Val Ser
 130 135 140
 Leu Lys Glu Leu Pro Gly Leu Pro Val Ile Lys Tyr Pro Glu Gly Val
 145 150 155 160
 Ala Ala Leu Ala Arg His Leu Glu Glu Val Met Arg Tyr Gln Thr Pro
 165 170 175
 Ala Asp Tyr His Val Phe Arg Ile Gln Val Ala Ser Glu Thr Leu Glu
 180 185 190
 Glu Thr Glu Tyr Pro Glu Phe Ile Asn Pro Ile Gly Ser Asp Gly Lys
 195 200 205
 Thr Tyr Ala Leu Leu Lys Glu Ala Arg Thr Glu Arg Val Val Ile Ser
 210 215 220
 Gly Gln Ala Val Asp Val Lys Val Pro Ala Gly Tyr Gly Ile Ser Pro
 225 230 235 240
 Phe Leu Lys Val Ser Arg Ile Leu Glu Met Ile Phe Ser Ala Tyr Gly
 245 250 255
 Phe Thr Leu Val Glu Asn Pro Phe Ala Thr Asp Tyr Gln Leu Ser Lys
 260 265 270

Met Val Val Leu Asn Asn Val Ala Asp Thr Ile Val Thr Gly Glu Ile
 275 280 285
 Asp Tyr Arg Asn Leu Met Pro Asp Cys Thr Val Asn Glu Phe Leu Asp
 290 295 300
 Ala Leu Phe Cys Arg Thr Gly Ala Lys Val Tyr Val Asn Ala Gly Arg
 305 310 315 320
 Lys Ala Val Ile Arg Leu Leu Lys Asp Ser Ile Gly Ala Thr Ala Ser
 325 330 335
 Ala Asp Trp Thr Pro Leu Lys Ala Ser Glu Pro Glu Ile Asn Tyr Thr
 340 345 350
 Pro Ala Lys Gln Leu Lys Leu Ser Ala Gly Thr Ser Phe Lys Glu Ala
 355 360 365
 Glu Pro Ala Ala Asp Ser Phe Glu Lys Phe Leu Lys Pro Tyr Gly Gly
 370 375 380
 Ile Ile Thr Glu Phe Thr Gly Asp Arg Asp Val Pro Asp Glu Leu Tyr
 385 390 395 400
 Ile Thr Tyr Gln Pro Ser Thr Gly Arg Tyr Tyr Lys Arg Asp Ile Val
 405 410 415
 Asn Lys Lys Lys Lys Trp Ile Ser Ser Asp Phe Phe Pro Trp Asp Lys
 420 425 430
 Gly Thr Pro Gly Val Glu Tyr Leu Glu Ile Thr Gly Lys Asp Glu Cys
 435 440 445
 Val Pro Met Ala Phe Lys Thr Gly Leu Leu Thr Pro Gly Tyr Leu Ala
 450 455 460
 Gly Ala Val Asn Ile Asn Thr Thr Leu Arg Gly Ala Ala Lys Glu Gln
 465 470 475 480
 Gly Glu Lys Lys Gln Thr Pro Leu Ala Phe Cys Phe Ala Met Gly Lys
 485 490 495
 Thr Asn Gln Ile Ile Gly Ala Gly Ala Leu Val Glu Glu Tyr Tyr Phe
 500 505 510
 Gly Ser Ser Leu Cys Arg Glu Pro Lys Gly Glu Tyr Phe Gln Asp Pro
 515 520 525
 Gly Gly Asn Val Tyr Arg Tyr Ser Leu Val Phe Lys Gly Glu Asp Gly
 530 535 540
 Ala Phe Asn Arg Phe Phe Lys Glu Tyr Asp
 545 550

<210> 6043

<211> 71

<212> PRT

<213> B.fragilis

<400> 6043

Thr Pro Ser Val Thr Thr Gly Arg Gly Gly Pro Ala Leu Gly Ala Leu
 1 5 10 15
 Ala Asp Ile Arg Pro Val Asp Val Ile His Pro Ser Lys Glu Cys Ala
 20 25 30
 Arg Leu Pro Gly Asn Val Asp Ala Ile Val Leu Leu Pro Leu Ser Val
 35 40 45
 Tyr Met Gly Asp Val Val Ser Ile Leu Thr Leu Lys Ile Arg Gly Arg
 50 55 60
 Phe Glu Tyr Pro Phe Phe Gly
 65 70

<210> 6044

<211> 177

<212> PRT

<213> B.fragilis

<400> 6044

Val Ala Cys Ser Thr Val Ile Ser Gly Phe Arg Pro Glu Leu Ser Ser
 1 5 10 15
 Ser Lys Thr Glu Glu Asp Phe Phe Trp Ala Gly Thr Asn Ala Ala Thr
 20 25 30
 Glu Asp Gln Asn Phe Val Ile Tyr Ser Tyr Pro Tyr Thr Asp Lys Asp
 35 40 45
 Thr Phe Thr Lys Glu Phe Phe Ile His Lys Arg Asp Ser Val Met Lys
 50 55 60
 Ala Asn Ile Pro Gly Ala Lys Glu Gly Met Tyr Met Ala Thr Asp Ser
 65 70 75 80
 Ser Thr Val Glu Val Arg Pro Ile Asp Ile His Gly Asp Tyr Thr Met
 85 90 95
 Glu Ala Arg Gly Leu Trp Arg Ile Lys Gly Asp Phe Met Gly Gly Pro
 100 105 110
 Phe Val Ser His Thr Arg Leu Asp Lys Ala Ser His Arg Ile Ile Thr
 115 120 125
 Thr Glu Val Phe Ile Tyr Ser Pro Asp Lys Met Lys Arg Asp Leu Met
 130 135 140
 Arg Arg Leu Glu Ala Ser Leu Tyr Thr Leu Gln Leu Pro Thr Glu Lys
 145 150 155 160
 Ala Gln Glu Gln Ile Pro Met Gly Ile Glu Gln Glu Glu Lys Thr Asn
 165 170 175
 Lys

<210> 6045

<211> 81

<212> PRT

<213> B.fragilis

<400> 6045

Leu Arg Ile Ser Lys Glu Leu Ile Ser Cys Asn Tyr Glu Val Asn Ile
 1 5 10 15
 Asn Val Leu Leu Met Leu Thr Ser Tyr Ser Ser Leu Ile Lys Ile Leu
 20 25 30
 Leu Phe Asp Asn Gln Leu Leu Ile Phe Trp Met His Ser Val Val Lys
 35 40 45
 Phe Phe Ser Tyr Val Gln Asp Val Arg Ser Cys Leu Phe Ile Lys Leu
 50 55 60
 Pro Leu Arg Leu Ser Ile Ala Cys Leu Ser Thr Tyr Phe His Ile Leu
 65 70 75 80
 Leu

<210> 6046

<211> 384

<212> PRT

<213> B.fragilis

<400> 6046

Glu Asn Tyr Ser Tyr Leu Cys Tyr Pro Lys Gly Glu Leu Arg Cys Arg
 1 5 10 15
 Arg Ile Ala Glu Met Asn Glu Arg Lys Ile Ile His Ile Asp Met Asp
 20 25 30
 Ala Phe Tyr Ala Ser Val Glu Gln Arg Asp His Pro Glu Leu Arg Gly
 35 40 45
 Lys Pro Leu Ala Val Gly His Ala Glu Glu Arg Gly Val Val Ala Ala
 50 55 60

Ala Ser Tyr Glu Ala Arg Arg Tyr Gly Val Arg Ser Ala Met Ser Ser
 65 70 75 80
 Gln Lys Ala Lys Arg Leu Cys Pro Gln Leu Ile Phe Val Pro Gly Arg
 85 90 95
 Met Glu Val Tyr Lys Ser Val Ser Arg Gln Val His Glu Ile Phe His
 100 105 110
 Glu Tyr Thr Asp Leu Ile Glu Pro Leu Ser Leu Asp Glu Ala Phe Leu
 115 120 125
 Asp Val Thr Glu Asn Lys Gln Gly Ile Leu Leu Ala Val Asp Ile Ala
 130 135 140
 Lys Ala Ile Lys Gln Arg Ile Arg Glu Glu Leu Ser Leu Val Ala Ser
 145 150 155 160
 Ala Gly Val Ser Tyr Asn Lys Phe Leu Ala Lys Ile Ala Ser Asp Phe
 165 170 175
 Arg Lys Pro Asp Gly Leu Cys Thr Ile His Pro Asp Gln Ala Ile Asp
 180 185 190
 Phe Ile Ala Arg Leu Pro Ile Glu Ser Phe Trp Gly Val Gly Pro Val
 195 200 205
 Thr Ala Arg Lys Met His Leu Leu Gly Ile His Asn Gly Leu Gln Leu
 210 215 220
 Arg Glu Cys Ser Ser Glu Met Leu Val Arg Gln Phe Gly Lys Val Gly
 225 230 235 240
 Leu Leu Tyr Tyr Asp Phe Ala Arg Gly Val Asp Leu Arg Pro Val Glu
 245 250 255
 Ala Val Arg Ile Arg Lys Ser Ile Gly Cys Glu His Thr Leu Glu Lys
 260 265 270
 Asp Ile His Val Arg Ser Ser Val Ile Ile Glu Leu Tyr His Val Ala
 275 280 285
 Thr Glu Leu Val Glu Arg Leu Gln Gln Lys Glu Phe Arg Gly Asn Thr
 290 295 300
 Leu Thr Leu Lys Ile Lys Phe His Asp Phe Ser Gln Ile Thr Arg Ser
 305 310 315 320
 Met Thr Gln Ala Gln Glu Leu Thr Asn Leu Glu Arg Ile Leu Pro Leu
 325 330 335
 Ala Lys Gln Leu Leu Lys Glu Val Glu Tyr Glu Gln His Pro Ile Arg
 340 345 350
 Leu Ile Gly Leu Ser Val Ser Asn Pro Arg Glu Glu Ala Asp Glu His
 355 360 365
 Arg Gly Val Trp Glu Gln Leu Ser Phe Glu Phe Ser Asp Trp Gly Lys
 370 375 380

<210> 6047

<211> 62

<212> PRT

<213> B.fragilis

<400> 6047

Arg Cys Leu Ser Pro Ser Arg Ser Ser Ser Ala Ser Cys Ser Pro Val
 1 5 10 15
 Asp Ala Pro Asp Gly Thr Asp Ala Arg Pro Ile Met Pro Asp Ser Asn
 20 25 30
 Thr Thr Ser Thr Ser Thr Val Gly Leu Pro Leu Glu Ser Arg Ile Ser
 35 40 45
 Arg Pro Val Ile Phe Ser Ile Phe Ile Val Ser Leu Val Phe
 50 55 60

<210> 6048

<211> 1110

<212> PRT

<213> B.fragilis

<400> 6048

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Ile Met Gly Phe Asn Glu Phe Leu Ser Ser Ile Phe Gly Asn Lys Ser
1      5      10      15
Thr Arg Asp Met Lys Glu Ile Gln Pro Trp Val Asp Lys Ile Lys Ala
20     25     30
Ala Tyr Pro Glu Val Ala Lys Leu Asp Asn Asp Gly Leu Arg Ala Lys
35     40     45
Thr Glu Glu Leu Lys Glu Tyr Ile Arg Asn Ser Ala Ser Lys Glu Arg
50     55     60
Ala Lys Ala Asp Glu Leu Arg Ala Gly Ile Glu Asn Val Glu Leu Glu
65     70     75     80
Asp Arg Glu Glu Val Phe Ala Gln Ile Asp Lys Ile Glu Lys Glu Ile
85     90     95
Leu Glu Ile Tyr Glu Lys Ala Leu Asp Glu Val Leu Pro Val Ala Phe
100    105    110
Ser Ile Val Lys Glu Ser Ala Lys Arg Phe Ser Glu Asn Glu Glu Ile
115    120    125
Val Val Thr Ala Thr Asp Phe Asp Arg Thr Leu Ala Ala Thr Lys Asp
130    135    140
Phe Val Arg Ile Glu Gly Asp Lys Ala Ile Trp Gln Asn His Trp Asn
145    150    155    160
Ala Gly Gly Asn Asp Thr Val Trp Asn Met Val His Tyr Asp Val Gln
165    170    175
Leu Phe Gly Gly Val Val Leu His Lys Gly Lys Ile Ala Glu Met Ala
180    185    190
Thr Gly Glu Gly Lys Thr Leu Val Ala Thr Leu Pro Val Phe Leu Asn
195    200    205
Ala Leu Thr Gly Asn Gly Val His Val Val Thr Val Asn Asp Tyr Leu
210    215    220
Ala Lys Arg Asp Ser Glu Trp Met Gly Pro Leu Tyr Met Phe His Gly
225    230    235    240
Leu Ser Val Asp Cys Ile Asp Arg His Gln Pro Asn Ser Asp Ala Arg
245    250    255
Arg Gln Ala Tyr Leu Ala Asp Ile Thr Phe Gly Thr Asn Asn Glu Phe
260    265    270
Gly Phe Asp Tyr Leu Arg Asp Asn Met Ala Ile Ser Pro Lys Asp Leu
275    280    285
Val Gln Arg Gln His Asn Tyr Ala Ile Val Asp Glu Val Asp Ser Val
290    295    300
Leu Ile Asp Asp Ala Arg Thr Pro Leu Ile Ile Ser Gly Pro Val Pro
305    310    315    320
Lys Gly Glu Asp Gln Leu Phe Asp Gln Leu Arg Pro Leu Val Glu Arg
325    330    335
Leu Val Glu Ala Gln Lys Val Leu Ala Thr Lys Tyr Leu Ser Glu Ala
340    345    350
Lys Lys Leu Ile Asn Ser Asp Asp Lys Lys Glu Val Glu Glu Gly Phe
355    360    365
Leu Ala Leu Phe Arg Ser His Lys Ala Leu Pro Lys Asn Lys Ala Leu
370    375    380
Ile Lys Phe Leu Ser Glu Gln Gly Ile Lys Ala Gly Met Leu Lys Thr
385    390    395    400
Glu Glu Val Tyr Met Glu Gln Asn Asn Lys Arg Met His Glu Ala Thr
405    410    415
Asp Pro Leu Tyr Phe Val Ile Asp Glu Lys Leu Asn Ser Val Asp Leu
420    425    430
Thr Asp Lys Gly Val Asp Leu Ile Thr Gly Asn Ser Glu Asp Pro Thr
435    440    445

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Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

915	920	925
Arg Met Tyr Asn Ile Ser Cys Asn Leu Lys Ala Ala Tyr Glu Ser Glu		
930	935	940
Ser Lys Glu Val Val Lys Ser Phe Glu Lys Ser Ile Leu Leu His Val		
945	950	955
Ile Asp Glu Ser Trp Lys Glu Asn Leu Arg Glu Leu Asp Glu Leu Lys		
	965	970
His Ser Val Gln Asn Ala Ser Tyr Glu Gln Lys Asp Pro Leu Leu Ile		
	980	985
Tyr Lys Leu Glu Ser Val Thr Leu Phe Asp Asn Met Val Asn Lys Ile		
	995	1000
Asn Asn Gln Thr Val Ser Ile Leu Met Arg Gly Gln Ile Pro Val Ala		
	1010	1015
Glu Pro Thr Glu Glu Gln Gln Glu Ala Ala Arg Arg Val Glu Val Arg		
1025	1030	1035
Gln Ala Ala Pro Glu Gln Arg Gln Asp Met Ser Lys Tyr Arg Glu Gln		
	1045	1050
Lys Gln Asp Leu Asn Asp Pro Asn Gln Gln Ala Ala Ala Gln Gln Asp		
	1060	1065
Thr Arg Glu Ala Val Lys Arg Glu Pro Ile Arg Ala Glu Lys Thr Val		
	1075	1080
Gly Arg Asn Asp Pro Cys Pro Cys Gly Ser Gly Lys Lys Tyr Lys Asn		
	1090	1095
Cys His Gly Arg Asn Ser		
1105	1110	

<210> 6049
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 <212> PRT
 <213> B.fragilis

<400> 6049
Glu Ala Glu Ser Leu Ser Phe Ile Asp Asn Leu Lys Leu Lys Ala Ser
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Tyr Val Phe Leu Gly Asn Asn Asn Ile Gly Asn Tyr Pro Tyr Gln Ser
20 25 30
Thr Tyr Ala Leu Gly Lys Ala Met Asn Tyr Val Phe Gly Gly Val Tyr
35 40 45
Thr Gln Gly Ala Ala Val Thr Tyr Val Asp Pro Thr Leu Lys Trp
50 55 60
Glu Lys Thr Arg Thr Thr Asp Val Gly Ile Glu Thr Ala Phe Trp Asn
65 70 75 80
Asn Lys Leu Thr Phe Asn Ala Ala Tyr Phe Tyr Arg Lys Thr Thr Asp
85 90 95
Ile Leu Tyr Lys Pro Ser Ala Ser Tyr Ser Ser Ile Phe Gly Leu Gly
100 105 110
Leu Ser Gln Val Asn Thr Gly Ser Leu Glu Asn Lys Gly Trp Glu Phe
115 120 125
Glu Ile Gly His Gln Asn Lys Ile Gly Glu Phe Ser Tyr His Val Asn
130 135 140
Gly Asn Phe Ser Ile Ile Lys Asn Lys Val Ile Ser Leu Gly Val Gly
145 150 155 160
Asp Val Glu Gln Lys Ser Gly Met Ile Gly Asn Gly Ser Asp Leu Phe
165 170 175
Leu Gly Tyr Pro Met Asn Met Phe Tyr Gly Tyr Lys Thr Asp Gly Val
180 185 190
Phe Leu Thr Asp Asp Glu Val Lys Glu Trp His Asp Gln Ser Lys Ile
195 200 205
Ala Pro Asn Ser Lys Ala Gly Asp Leu Arg Tyr Val Asp Ile Ser Gly

210	215	220
Asp Gly Lys Val	Asp Glu Ser Asp Lys Thr Tyr	Leu Gly Ser Lys Ile
225	230	235
Pro Gln Tyr Thr	Phe Gly Leu Gly Leu Gly Ala Glu Tyr Lys Gly Phe	240
	245	250
Asp Phe Asn Ile	Leu Leu Gln Gly Val Ala Lys Val Lys Gly Gln Leu	255
	260	265
Thr Asn Tyr Ala	Gly Tyr Ala Phe Phe Gln Glu Gly Asn Ile Gln Lys	270
	275	280
Trp Gln Ala Glu Glu Thr	Trp Thr Asn Asn Gln Ser Asn Arg Tyr Pro	285
	290	295
Lys Tyr Pro Arg Leu Glu Val Met Ser Asn Ala Gly Ser Asn Asn Thr		300
305	310	315
Leu Gly Ser Asp Phe Trp Ile Leu Asp Ala Ser Tyr Leu Lys Val Arg		320
	325	330
Asn Ile Gln Leu Gly Tyr Thr Leu Pro Lys Arg Ile Thr Gln Lys Phe		335
	340	345
Gly Ser Ser Asn Leu Arg Phe Tyr Ile Ser Leu Asp Asn Pro Phe Ser		350
	355	360
Ile Ser Gly Tyr Arg Lys Gly Trp Asp Pro Glu Ile Asn Thr Asp Gly		365
	370	375
Ser Tyr Tyr Pro Ile Leu Ser Thr Tyr Thr Phe Gly Leu Thr Leu Lys		380
385	390	395
Phe		400

<210> 6050

<211> 349

<212> PRT

<213> B.fragilis

<400> 6050

Thr Asp Leu Leu Leu Thr Tyr Phe Leu Leu Ile Met Glu Lys Lys Thr	
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Arg Lys Ser Phe Ile Trp Leu Ala Ile Leu Leu Leu Gly Thr Ile Trp	
	20 25 30
Ile Leu Ala Gln Arg Asn Lys Gln Ile Pro Tyr Asn Ser Ile Asn Gly	
	35 40 45
Leu Val Phe Gly Thr Val Tyr Asn Ile Thr Tyr Gln Tyr Asp Gly Asn	
	50 55 60
Leu Lys Ala Glu Ile Asp Ala Glu Leu Lys Lys Phe Asp Gly Ser Leu	
65	70 75 80
Ser Pro Phe Asn Asp Thr Ser Val Ile Thr Arg Val Asn Arg Asn Glu	
	85 90 95
Glu Ile Val Thr Asp Thr Phe Phe Gln Thr Cys Phe Asn Arg Ser Met	
	100 105 110
Glu Ile Ser Ala Glu Thr Arg Gly Ala Phe Asp Ile Thr Val Ala Pro	
	115 120 125
Leu Ala Asn Ala Trp Gly Phe Gly Phe Lys Lys Gly Ala Phe Pro Asp	
	130 135 140
Ser Ile Met Ile Asp Ser Leu Leu Gln Ile Thr Gly Tyr Gln Lys Val	
145	150 155 160
Lys Leu Glu Asn Gly Lys Val Ile Lys Glu Asp Pro Arg Val Met Leu	
	165 170 175
Ser Cys Ser Ala Val Ala Lys Gly Tyr Ser Val Asp Val Val Ala Arg	
	180 185 190
Tyr Leu Asp Ser Lys Gly Ile Lys Asn Tyr Met Val Asp Ile Gly Gly	
	195 200 205
Glu Leu Val Val Lys Gly Val Asn Pro Lys Glu Glu Ala Trp Arg Ile	

210	215	220
Gly Ile Asn Lys Pro Val Asp Asp Ser Leu Ser Leu Asn Gln Glu Ile		
225	230	235
Gln Thr Thr Leu Lys Leu Thr Asn Val Gly Ile Ala Thr Ser Gly Asn		240
	245	250
Tyr Arg Asn Phe Tyr Tyr Lys Asp Gly Lys Lys Tyr Ala His Thr Ile		255
	260	265
Asp Pro Arg Thr Gly Tyr Pro Val Gln His Asn Ile Leu Ser Ala Thr		270
	275	280
Val Val Ala Asp Asp Cys Met Thr Ala Asp Ala Leu Ala Thr Ala Phe		285
	290	295
Met Val Met Gly Leu Asp Glu Ala Glu Ala Phe Thr Lys Ser His Pro		300
305	310	315
Asn Ile Gly Ala Tyr Phe Ile Tyr Ser Asp Glu Lys Gly Glu Val Lys		320
	325	330
Ser Tyr Phe Thr Lys Asn Met Lys Gln Tyr Leu Asp Lys		335
	340	345

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 <211> 542
 <212> .PRT
 <213> B.fragilis

<400> 6051
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Lys Leu Leu Met Asn Lys Ile Asp Met Thr Asn Glu Arg Met Lys Leu
20 25 30
Leu Asn Cys Thr Leu Gly Leu Val Ala Gly Val Ser Leu Pro Val Ser
35 40 45
Ala Leu Ala Val Pro Gln Pro Ala Gln Asp Gln Thr Glu Lys Gln Pro
50 55 60
Asn Ile Ile Leu Ile Val Ala Asp Asp Leu Gly Tyr Gly Asp Leu Ser
65 70 75 80
Cys Tyr Gly Ala His Arg Ile Gln Thr Pro Gly Met Asp Arg Ile Ala
85 90 95
Asn Glu Gly Ile Arg Phe Thr Gln Gly Phe Cys Thr Ala Ala Thr Ser
100 105 110
Thr Pro Ser Arg Tyr Ser Val Met Thr Gly Lys Tyr Pro Trp Ser Asn
115 120 125
Val Asp Ala Lys Ile Leu Pro Gly Asn Ala Ala Leu Ile Ile Asp Thr
130 135 140
Gln Lys Ile Thr Leu Pro Lys Leu Met Lys Gln Ala Gly Tyr Thr Thr
145 150 155 160
Gly Ser Val Gly Lys Trp His Ile Gly Leu Gly Asp Gly His Val Asp
165 170 175
Trp Asn Lys Glu Val His Pro Gly Ala Ala Glu Ile Gly Tyr Asp Tyr
180 185 190
Ser Phe Ile Gln Ala Ala Thr Asn Asp Arg Val Pro Cys Val Phe Leu
195 200 205
Glu Asn Gly Arg Val Val Gly Leu Asp Pro Asn Asp Pro Leu Tyr Val
210 215 220
Asp Tyr Arg Lys Asn Phe Pro Gly Glu Pro Thr Gly Lys Glu Asn Pro
225 230 235 240
Glu Leu Leu Arg Met His Pro Ser Val Gly His Ala Gly Ser Ile Val
245 250 255
Asn Gly Val Pro Arg Ile Gly Phe Gln Lys Gly Gly Lys Ala Ala Gln
260 265 270
Trp Lys Asp Glu Glu Met Ala Gly Leu Phe Leu Asp Lys Ala Arg Gln

6051 542 .PRT B.fragilis

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<210> 6052
<211> 541
<212> PRT
<213> B.fragilis
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Ser	Ser	Met	Phe	His	Ser	Phe	Gln	Thr	Ser	Ile	Ala	Gly	Ile	Glu	Leu
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Pro	Arg	Leu	Phe	Thr	Tyr	Pro	Phe	His	Tyr	Thr	Pro	His	Pro	Leu	Cys
			20					25					30		
Val	Met	Ala	Ala	Gly	Glu	Val	Gln	Ala	Tyr	Ile	Asn	Lys	Gln	Thr	Arg
		35					40					45			
Trp	Lys	Glu	Glu	Leu	Asp	Lys	Gly	Lys	Met	Phe	Gly	Val	Leu	Ile	Val
	50					55				60					
Arg	Thr	Ser	Asn	Gly	Gln	Thr	Gly	Tyr	Leu	Ala	Ala	Phe	Ser	Gly	Asn
65				70					75					80	
Leu	Cys	Gly	Ser	Asn	Ser	His	Ser	Phe	Phe	Val	Pro	Pro	Val	Tyr	Asp
				85				90						95	
Leu	Leu	Lys	Pro	Asp	Gly	Phe	Phe	Lys	Ile	Glu	Glu	Glu	Gln	Ile	Ser
			100					105					110		
Ala	Ile	Asn	His	Gln	Ile	Gly	Gln	Leu	Gln	Asn	Cys	Asp	Arg	Tyr	Leu
		115					120					125			
Glu	Leu	Gln	Gln	Lys	Met	Glu	Arg	Glu	Thr	Ala	Ser	Ser	Gln	Gln	Ala
	130					135				140					
Leu	Ser	Glu	Ala	Arg	Lys	Val	Leu	Lys	Ala	Ala	Lys	Glu	Lys	Arg	Glu

145		150		155		160
Gln Arg Arg Leu His Arg Pro Asn Glu Asn Glu Gln Val Ala Met Ile						
	165		170		175	
Arg Glu Ser Gln Tyr Gln Lys Ala Glu Phe Lys Arg Leu Glu Arg Tyr						
	180		185		190	
Trp Lys Glu Gln Ile Ser Glu Ile Lys Thr Glu Leu Glu Ser Phe Ser						
	195		200		205	
Ser Gln Ile Glu Ala Leu Lys Ala Glu Arg Arg Asn Arg Ser Ala Ala						
	210		215		220	
Leu Gln Gln Lys Leu Phe Gln Gln Phe Asn Phe Leu Asn Ala Lys Gly						
225		230		235		240
Glu Thr Lys Asn Leu Cys Ala Ile Phe Glu Glu Thr Val Gln Lys Thr						
	245		250		255	
Pro Pro Ala Gly Ala Gly Glu Cys Ala Ala Pro Lys Leu Leu Gln Tyr						
	260		265		270	
Ala Tyr Leu Ser Gly Leu Ser Pro Ile Ala Met Ala Glu Phe Trp Trp						
	275		280		285	
Gly Glu Ser Pro Lys Thr Glu Ile Arg His His Gly Tyr Tyr Tyr Pro						
	290		295		300	
Ser Cys Arg Gly Lys Cys Glu Pro Ile Leu Arg His Met Leu Gln Gly						
305		310		315		320
Leu Asn Val Glu Pro Ala Pro Ser Glu Arg Tyr Ser Leu Ser Gln Asn						
	325		330		335	
Met Pro Glu Ile Leu Phe Glu Asp Gln Trp Leu Leu Val Leu His Lys						
	340		345		350	
Pro Glu Gly Val Leu Ser Val Pro Gly Lys Ser Glu Glu Gln Ser Ile						
	355		360		365	
Tyr Ser Leu Leu Arg Ala Arg Tyr Pro Glu Ala Thr Gly Pro Leu Val						
	370		375		380	
Val His Arg Leu Asp Met Ala Thr Ser Gly Leu Leu Leu Ala Ala Lys						
385		390		395		400
Thr Gln Glu Val His Arg His Leu Gln Ala Gln Phe Glu Asn Arg Ser						
	405		410		415	
Ile Lys Lys Arg Tyr Ile Ala Leu Leu Asp Gly Ile Leu Pro Glu Glu						
	420		425		430	
Glu Gly Val Ile Asp Leu Pro Ile Cys Pro Asp Tyr Leu Asp Arg Pro						
	435		440		445	
Arg Gln Met Val Asn Glu Glu Leu Gly Lys Thr Ala Ile Thr Arg Tyr						
	450		455		460	
Gln Val Met Asp Arg Lys Asn Gly Gln Thr Arg Ile Ala Phe Phe Pro						
465		470		475		480
Leu Thr Gly Arg Thr His Gln Leu Arg Val His Ala Ala His Pro Leu						
	485		490		495	
Gly Leu Asn Cys Pro Ile Val Gly Asp Glu Leu Tyr Gly Arg Lys Ala						
	500		505		510	
Glu Arg Leu Tyr Leu His Ala Glu Tyr Leu Glu Phe Ile His Pro Val						
	515		520		525	
Ser Gly Gln Arg Met Val Ile Glu Lys Lys Ala Glu Phe						
	530		535		540	

<210> 6053

<211> 166

<212> PRT

<213> B.fragilis

<400> 6053

Phe Ser Ala Phe Phe Val Ile Tyr Pro Phe Ile Ser Gly Thr Ile Ile			
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Ile Lys Tyr Ser Leu Ile Arg Gln Arg Ile Leu Phe Phe Leu Lys Phe			

	20		25		30										
Ile	Ala	Thr	Phe	Ala	Ala	Thr	Met	Ile	Lys	Tyr	Ile	Phe	Cys	Ile	Leu
	35						40					45			
Ile	Gly	Ile	Phe	Phe	Val	Tyr	Gly	Ala	Gly	Tyr	Thr	Ala	Ser	Ile	Glu
	50					55					60				
Glu	Thr	Ala	Asp	Leu	Pro	Ala	Glu	Val	Thr	Ala	Thr	Phe	Val	Ser	Gln
65					70					75					80
Tyr	Ala	Gly	Asp	His	Ser	Leu	Phe	Asn	Asp	Glu	Thr	Ala	Glu	Ser	Lys
			85					90						95	
Val	Cys	Asp	Ala	Ile	Leu	Pro	His	Ser	Ser	Phe	Ser	Arg	Glu	Leu	Ser
			100					105					110		
Ser	Ser	Lys	Ile	Leu	Lys	Leu	Lys	Leu	Gln	Thr	Ala	Ile	Arg	Leu	Leu
		115					120					125			
Asn	Ala	Ser	Leu	Phe	His	Gln	Ser	Glu	Arg	Gly	Asp	Thr	Tyr	Pro	Asp
	130					135					140				
Phe	Asn	His	Asn	Phe	Ile	Lys	Tyr	Ser	Ser	Gly	Tyr	Tyr	Val	Tyr	Ser
145					150					155					160
Leu	Glu	His	Ile	Leu	Ile										
				165											

<210> 6054

<211> 307

<212> PRT

<213> B.fragilis

<400> 6054

Glu	Ser	Leu	Pro	Tyr	Thr	Gln	Phe	Glu	Tyr	Leu	Asn	Ile	Met	Ala	Asp
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Asn	Tyr	Ile	Glu	Arg	Gln	Tyr	Glu	Gln	Tyr	Glu	Ala	Arg	Lys	Ala	Ala
			20					25					30		
Trp	Glu	Lys	Ala	Arg	Lys	Tyr	Gly	Lys	Lys	Lys	Thr	Gly	Ile	Thr	His
		35					40					45			
Pro	Ala	Arg	Thr	Glu	Gln	Pro	Gly	Gln	Thr	Thr	Ile	Glu	Pro	His	His
	50					55					60				
Tyr	Lys	Arg	Val	Phe	Val	Thr	Gly	Gly	Ala	Asn	Gly	Ile	Gly	Lys	Ala
65					70					75					80
Ile	Val	Glu	Ile	Phe	Cys	Lys	Ser	Gly	Tyr	Arg	Val	Ala	Phe	Cys	Asp
			85					90						95	
Lys	Asp	Gly	Ile	Ala	Gly	Lys	Arg	Thr	Ala	Glu	Glu	Thr	Gly	Ala	Ile
		100						105					110		
Phe	His	Gln	Val	Asp	Ile	Ser	Asp	Lys	Asp	Met	Leu	Glu	His	Cys	Met
		115					120					125			
Gln	Ser	Ile	Ile	Glu	Glu	Trp	Asp	Asp	Ile	Asp	Ile	Leu	Ile	Asn	Asn
	130					135					140				
Ala	Gly	Ile	Ser	Asp	Phe	Ser	Pro	Ile	Thr	Glu	Thr	Ser	Ile	Glu	Asp
145					150					155					160
Phe	Asp	Arg	Ile	Leu	Ser	Ile	Asn	Leu	Arg	Pro	Val	Phe	Ile	Thr	Ser
			165					170						175	
Arg	Phe	Ile	Ala	Ile	His	Arg	Gln	Ser	Gln	Thr	Thr	Ser	Asn	Pro	Tyr
		180					185						190		
Gly	Arg	Ile	Ile	Asn	Ile	Cys	Ser	Thr	Arg	Tyr	Leu	Met	Ser	Glu	Ser
	195						200					205			
Gly	Ser	Glu	Gly	Tyr	Ala	Ala	Ser	Lys	Gly	Gly	Ile	Tyr	Ser	Leu	Thr
	210					215					220				
His	Ala	Leu	Ala	Leu	Ser	Leu	Ala	Gln	Phe	His	Ile	Thr	Val	Asn	Ser
225					230					235					240
Ile	Ala	Pro	Gly	Trp	Ile	Gln	Thr	His	Asp	Tyr	Asp	Arg	Leu	Arg	Pro
			245						250					255	
Lys	Asp	His	Glu	Gln	His	Pro	Ser	Arg	Arg	Val	Gly	Lys	Pro	Glu	Asp

	260		265		270										
Ile	Ala	Arg	Met	Cys	Arg	Phe	Leu	Cys	Glu	Glu	Gly	Asn	Asp	Phe	Ile
	275						280					285			
Asn	Gly	Glu	Asn	Ile	Thr	Ile	Asp	Gly	Gly	Met	Thr	Lys	Lys	Met	Ile
	290					295						300			
Tyr	Thr	Glu													
305															

<210> 6055

<211> 540

<212> PRT

<213> B.fragilis

<400> 6055

Leu	Cys	Ala	Leu	Ser	Arg	Lys	Thr	Thr	Met	Leu	Lys	Arg	Ile	Pro	His
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Thr	Tyr	Thr	Ile	Ile	Ser	Ser	Val	Ile	Leu	Leu	Cys	Ala	Val	Leu	Ser
		20						25					30		
Trp	Ile	Ile	Pro	Ala	Gly	Glu	Tyr	Val	Arg	Glu	Thr	Ile	Asp	Val	Asn
	35					40						45			
Gly	Ile	Ser	Arg	Thr	Val	Ile	Val	Asp	His	Ser	Phe	His	Arg	Val	Glu
	50				55						60				
Gln	Thr	Pro	Gln	Thr	Trp	Gln	Val	Phe	Ser	Ser	Leu	Leu	Glu	Gly	Phe
65			70						75					80	
Glu	Arg	Gln	Ala	Gly	Ile	Ile	Ala	Phe	Leu	Leu	Ile	Met	Gly	Gly	Ala
			85					90					95		
Phe	Gln	Ile	Met	Asn	Ser	Ser	Arg	Ala	Ile	Asp	Thr	Gly	Ile	Phe	Ser
			100					105					110		
Phe	Leu	Asn	Phe	Thr	Lys	Gly	Leu	Glu	Lys	His	Arg	Leu	Ile	Lys	Ile
		115					120					125			
Leu	Gly	Val	Asn	Asn	Val	Val	Ile	Ser	Leu	Val	Ile	Ile	Leu	Phe	Ser
	130				135						140				
Leu	Phe	Gly	Ser	Val	Phe	Gly	Met	Ser	Glu	Glu	Thr	Leu	Ala	Phe	Val
	145			150					155					160	
Ile	Ile	Ile	Val	Pro	Leu	Ala	Ile	Ser	Met	Gly	Tyr	Asp	Ser	Ile	Thr
			165						170					175	
Gly	Leu	Cys	Met	Val	Tyr	Val	Ala	Ala	His	Ile	Gly	Phe	Ser	Gly	Ala
		180					185						190		
Val	Leu	Asn	Pro	Phe	Thr	Ile	Gly	Ile	Ala	Gln	Gly	Leu	Ser	Asp	Leu
	195					200						205			
Pro	Leu	Phe	Ser	Gly	Phe	Glu	Tyr	Arg	Met	Phe	Cys	Trp	Leu	Val	Leu
	210				215						220				
Thr	Thr	Ala	Leu	Ile	Val	Cys	Val	Leu	Arg	Tyr	Ala	Ala	Val	Val	Lys
	225				230					235				240	
Lys	His	Pro	Glu	Lys	Ser	Pro	Met	Tyr	His	Ala	Asp	Ala	Tyr	Trp	Arg
			245						250					255	
Lys	Arg	Glu	Lys	Glu	Ser	Cys	Gly	Glu	Ile	Ser	His	Val	Thr	Thr	Arg
		260					265					270			
Gln	Ala	Trp	Ile	Val	Tyr	Leu	Leu	Leu	Val	Ser	Leu	Gly	Leu	Phe	
	275					280					285				
Ser	Ile	Ile	Tyr	Pro	Ile	Ser	Thr	Phe	Ser	Val	Gly	Glu	Ala	Ser	Val
	290				295						300				
Thr	Cys	Tyr	Ala	Val	Pro	Thr	Leu	Ser	Ile	Leu	Phe	Ala	Val	Phe	Gly
	305			310					315					320	
Trp	Leu	Gly	Leu	Arg	Lys	Ser	Asn	Gln	Phe	Phe	Ile	Leu	Thr	Leu	Leu
			325					330					335		
Ala	Phe	Thr	Ile	Leu	Phe	Leu	Ile	Ile	Gly	Val	Met	Gly	His	Gly	Trp
		340					345					350			
Tyr	Leu	Pro	Glu	Ile	Ser	Ala	Ile	Phe	Leu	Ala	Met	Gly	Ile	Leu	Ser

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355	360	365
Gly Phe Ala Asn Ser Glu His Ala Asp Ala Ile Ile Lys Gln Phe Met		
370	375	380
Asp Gly Ala Lys Asp Met Leu Ser Ala Ala Ile Val Val Gly Leu Ala		
385	390	395
Gly Gly Ile Ile Gln Ile Leu Gln Asp Gly His Ile Ile Asp Pro Ile		
	405	410
Leu His Ser Leu Ala Ser Leu Met Gly Glu Ala Gly Lys Ile Val Ser		
	420	425
Leu Gly Val Met Tyr Leu Ile Gln Thr Leu Ile Asn Leu Ile Ile Pro		
	435	440
Ser Gly Ser Ala Lys Ala Ala Leu Thr Met Pro Ile Met Ala Pro Phe		
	450	455
Ser Asp Val Ile Gly Leu Ser Arg Gln Ala Thr Val Met Ala Tyr Gln		
465	470	475
Phe Gly Asp Gly Phe Thr Asn Met Ile Thr Pro Thr Ser Ala Val Leu		
	485	490
Met Gly Ala Leu Gly Ile Ala Arg Ile Pro Tyr Glu Ile Trp Val Lys		
	500	505
Trp Leu Trp Lys Ile Leu Leu Leu Phe Ile Ile Leu Gly Met Val Leu		
	515	520
Leu Ile Pro Thr Val Leu Phe Pro Leu Asn Gly Phe		
	530	535
		540

<210> 6056
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 <212> PRT
 <213> B.fragilis

<400> 6056

Asn Leu Asp Thr Met Lys Ile Lys Thr Leu Val Ala Val Leu Phe Leu		
1	5	10
Ser Ala Gly Ala Thr Thr Val Val Ala Gln Asp Asp Ala Asn Cys Asn		
	20	25
Ser Asn Ser Ser Ile Ser His Glu Ala Val Lys Ala Gly Asn Phe Lys		
	35	40
Asp Ala Tyr Thr Pro Trp Lys Ala Val Leu Glu Asn Cys Pro Thr Leu		
	50	55
Arg Phe Tyr Thr Phe Thr Asp Gly Tyr Lys Ile Leu Lys Gly Leu Leu		
65	70	75
Gly Gln Ile Lys Asp Arg Asn Ser Ala Glu Tyr Lys Lys Tyr Phe Asp		
	85	90
Glu Leu Met Asn Thr His Asp Leu Arg Met Lys Tyr Thr Gln Glu Phe		
	100	105
Leu Gly Lys Gly Val Lys Val Ser Ser Glu Asp Glu Ala Leu Gly Ile		
	115	120
Lys Ala Val Asp Tyr Ile Ala Phe Ala Pro Lys Val Asp Val Asn Gln		
	130	135
Ala Tyr Asp Trp Leu Lys Lys Ser Val Asp Ala Ala Lys Ala Glu Ser		
145	150	155
Ala Ala Ala Thr Leu Phe Tyr Phe Leu Gln Met Ser His Asp Lys Leu		
	165	170
Lys Glu Asp Pro Ala His Lys Glu Gln Phe Ile Gln Asp Tyr Leu Ala		
	180	185
Ala Ser Glu Tyr Ala Asp Asp Ala Ile Ala Ala Ala Asp Lys Glu Ser		
	195	200
Val Lys Lys Ala Phe Gly Gly Ile Lys Asp Asn Leu Val Ala Leu Phe		
	210	215
Ile Asn Ser Gly Thr Ala Asp Cys Glu Ser Leu Gln Gly Ile Tyr Gly		
		220

6056 445 PRT B.fragilis

225		230		235		240									
Pro	Lys	Val	Glu	Thr	Asn	Gln	Thr	Asp	Leu	Asn	Tyr	Leu	Lys	Lys	Val
				245					250					255	
Ile	Ser	Ile	Met	Lys	Met	Met	Lys	Cys	Thr	Asp	Ser	Asp	Ala	Tyr	Gln
			260					265					270		
Gln	Ala	Ser	Phe	Tyr	Val	Tyr	Lys	Ile	Glu	Pro	Ser	Ala	Glu	Ala	Ala
		275					280					285			
Thr	Gly	Cys	Ala	Tyr	Gln	Ala	Tyr	Lys	Lys	Gly	Asp	Ile	Asp	Gly	Ser
	290					295					300				
Val	Lys	Phe	Phe	Asp	Glu	Ala	Ile	Asn	Leu	Glu	Thr	Asp	Asn	Ala	Lys
305					310					315				320	
Lys	Ala	Glu	Lys	Ala	Tyr	Ala	Ala	Ala	Ser	Val	Leu	Thr	Thr	Ala	Lys
			325						330					335	
Lys	Leu	Ser	Gln	Ala	Arg	Ser	Tyr	Ala	Gln	Lys	Ala	Ile	Ser	Phe	Asn
			340					345				350			
Glu	Asn	Tyr	Gly	Ala	Pro	Tyr	Ile	Leu	Ile	Ala	Asn	Leu	Tyr	Ala	Met
		355					360					365			
Ser	Pro	Asn	Trp	Ser	Asp	Glu	Ser	Ala	Leu	Asn	Lys	Cys	Thr	Tyr	Phe
	370					375					380				
Ala	Val	Ile	Asp	Lys	Leu	Gln	Lys	Ala	Lys	Ser	Val	Asp	Pro	Ser	Val
385					390					395					400
Thr	Glu	Glu	Val	Asn	Lys	Met	Ile	Ser	Arg	Tyr	Ser	Ala	Tyr	Thr	Pro
			405						410					415	
Gln	Ala	Lys	Asp	Leu	Phe	Met	Leu	Gly	Tyr	Lys	Ala	Gly	Asp	Arg	Ile
			420					425				430			
Thr	Ile	Gly	Gly	Trp	Ile	Gly	Glu	Ser	Thr	Thr	Ile	Arg			
		435					440					445			

<210> 6057

<211> 166

<212> PRT

<213> B.fragilis

<400> 6057

Ile	Ile	Ser	Thr	Leu	Asp	Glu	Ser	Ile	Arg	Pro	Phe	Arg	Arg	Phe	Val
1				5					10					15	
Lys	Thr	Leu	Lys	Leu	Met	His	Met	Lys	Lys	Tyr	Leu	Phe	Tyr	Leu	Ser
		20						25					30		
Met	Ala	Leu	Val	Ala	Val	Val	Leu	Phe	Ser	Cys	Lys	Ser	Gly	Lys	Lys
		35					40					45			
Ser	Val	Phe	Thr	Pro	Thr	Ser	Ser	Gly	Arg	Ala	Tyr	Glu	Val	Leu	Val
		50				55					60				
Val	Val	Glu	Lys	Pro	Val	Trp	Glu	Arg	Pro	Ala	Gly	Arg	Ala	Leu	Tyr
65					70					75				80	
Asn	Val	Leu	Asp	Thr	Asp	Val	Pro	Gly	Leu	Pro	Gln	Ser	Glu	Arg	Ser
				85					90					95	
Phe	Arg	Ile	Met	Ser	Thr	Ser	Pro	Lys	Asp	Phe	Asp	Ala	Ile	Leu	Lys
			100					105					110		
Leu	Val	Arg	Asn	Ile	Ile	Ile	Val	Asp	Ile	Gln	Asp	Ile	Tyr	Thr	Gln
		115					120					125			
Pro	Lys	Phe	Lys	Tyr	Ala	Lys	Asp	Val	Tyr	Ala	Ser	Pro	Gln	Met	Ile
	130					135					140				
Leu	Thr	Ile	Gln	Ala	Pro	Asp	Glu	Ala	Ser	Phe	Glu	Lys	Phe	Val	Glu
145					150					155					160
Glu	Asn	Lys	Gln	Pro	Ile										
				165											

<210> 6058

<211> 396

<212> PRT
 <213> B.fragilis

<400> 6058

Lys	Pro	Arg	Thr	Val	Lys	Asn	Cys	Ser	Arg	Leu	Phe	Tyr	Ile	Gln	Pro
1			5						10					15	
Lys	Ser	Tyr	Phe	Cys	Ser	Phe	Arg	Lys	Val	Lys	Lys	Gln	Ala	Met	Thr
		20						25					30		
Lys	Tyr	Pro	Tyr	Ile	Leu	Phe	Val	Leu	Leu	Leu	Ala	Ser	Phe	Ser	Ser
		35					40					45			
Cys	Gln	Thr	Val	Glu	Gln	Leu	Ser	Ile	Asp	Tyr	Met	Leu	Pro	Ala	Glu
	50					55					60				
Ile	Ser	Phe	Pro	Asn	Glu	Leu	Lys	Arg	Val	Ala	Val	Val	Asn	Asn	Val
65				70					75					80	
Ser	Asp	Thr	Pro	Asp	Asn	Thr	Leu	Pro	Pro	Lys	Asp	Asn	Thr	Ile	Lys
			85					90					95		
Asn	Lys	Asn	Glu	Leu	Ser	Arg	Ala	Val	Ala	Tyr	His	Glu	Gly	Gln	Pro
			100					105					110		
Ala	Leu	Thr	Thr	Glu	Ala	Leu	Ala	Lys	Ala	Ile	Ala	Glu	Gln	Asn	Tyr
		115					120					125			
Phe	Asn	Glu	Val	Val	Ile	Cys	Asp	Ser	Ala	Leu	Arg	Ala	Arg	Asp	Phe
	130					135					140				
Thr	Pro	Arg	Glu	Ser	Thr	Leu	Ser	Gln	Glu	Glu	Val	Gln	Thr	Leu	Ala
145					150					155				160	
Gln	Phe	Leu	Asp	Val	Asp	Cys	Ile	Ile	Ser	Leu	Glu	Asn	Leu	Gln	Met
			165					170					175		
Lys	Ser	Thr	Arg	Val	Leu	Ser	Tyr	Ile	Pro	Glu	Trp	Asn	Thr	Tyr	Tyr
			180					185					190		
Gly	Thr	Leu	Asp	Thr	Lys	Val	Tyr	Pro	Thr	Leu	Lys	Ile	Tyr	Leu	Pro
		195					200					205			
Gly	Arg	Lys	Ser	Pro	Met	Val	Thr	Ile	Asn	Thr	His	Asp	Ser	Ile	Phe
	210					215					220				
Trp	Glu	Glu	Tyr	Gly	Asn	Thr	Glu	Gly	Phe	Val	Arg	Ser	Arg	Leu	Pro
225					230					235				240	
Asp	Glu	Arg	Gln	Met	Ile	Arg	Glu	Ala	Ser	Glu	Phe	Ala	Gly	Ser	Val
			245						250				255		
Pro	Val	Asn	Arg	Ile	Leu	Pro	Tyr	Trp	Lys	Thr	Ala	Asn	Arg	Tyr	Tyr
		260						265					270		
Phe	Ile	Asn	Gly	Ser	Val	Ala	Met	Arg	Asp	Ala	Ala	Val	Tyr	Val	Lys
	275						280				285				
Glu	Asn	Glu	Trp	Glu	Lys	Ala	Ser	Lys	Leu	Trp	Glu	Gln	Ala	Phe	Lys
	290					295					300				
Ala	Ala	Lys	Asn	Asp	Lys	Lys	Lys	Met	Arg	Ala	Ala	Phe	Asn	Leu	Ala
305					310					315				320	
Leu	Tyr	Tyr	Glu	Met	Lys	Asp	Ser	Val	Glu	Glu	Ala	His	Lys	Trp	Ala
			325						330				335		
Val	Thr	Ala	Gln	Glu	Leu	Ala	Arg	Lys	Ile	Asp	Lys	Ile	Asp	Thr	Leu
		340						345					350		
Lys	Arg	Asn	Asp	Ile	Asp	Leu	Ser	Glu	Ile	Pro	Asn	Tyr	Tyr	Leu	Thr
		355				360						365			
Ser	Leu	Tyr	Val	Asn	Glu	Leu	Lys	Glu	Arg	Ser	Asn	Gly	Leu	Gly	Lys
	370					375					380				
Leu	Lys	Gly	Gln	Met	Ser	Arg	Phe	Asn	Glu	Asp	Phe				
385					390					395					

<210> 6059
 <211> 673
 <212> PRT
 <213> B.fragilis

<400> 6059

Leu Cys Arg Thr Lys Met Lys Ser Tyr Met Glu Lys Leu Lys Met Glu
 1 5 10 15
 Ser Val Ser Ile Ala Glu Asp Ser Leu Asn Lys Ile Ala Glu Leu Phe
 20 25 30
 Pro Asn Val Val Thr Glu Ser Met Gly Lys Asp Gly Gln Leu His Lys
 35 40 45
 Ala Ile Asp Phe Asp Lys Leu Lys Phe Leu Leu Thr Ala Asn Gln Ala
 50 55 60
 Glu Met Gly Val Val Tyr Asp Asp Asp Glu Arg Tyr Glu Leu Thr Trp
 65 70 75 80
 Val Gly Lys Lys Gln Ala Ile Arg Glu Val Ala His Pro Ile Arg Lys
 85 90 95
 Thr Leu Arg Pro Cys Pro Glu Glu Ser Arg Asn Trp Glu Gln Thr Gln
 100 105 110
 Asn Leu Tyr Ile Glu Gly Asp Asn Leu Asp Ala Met Lys Leu Leu Lys
 115 120 125
 Lys Ser Tyr Ala Gly Lys Val Asp Val Ile Tyr Ile Asp Pro Pro Tyr
 130 135 140
 Asn Thr Gly Lys Asp Phe Ile Phe Asn Asp Thr Phe Ala Leu Ser Gln
 145 150 155 160
 Glu Glu Ser Asp Glu Lys Gln Gly Arg Tyr Asn Glu Glu Gly Gln Arg
 165 170 175
 Leu Phe Gln Asn Thr Glu Ala Asn Gly Lys Phe His Ser Asp Trp Cys
 180 185 190
 Ser Met Met Tyr Ala Arg Leu Met Leu Ala Arg Thr Leu Leu Asn Asp
 195 200 205
 Asn Gly Ile Ile Phe Ile Ser Ile Asp Asp His Glu Leu Ala Asn Leu
 210 215 220
 Ile Lys Ile Gly Asn Glu Val Phe Asn Ala Ser Asn Phe Ile Asp Val
 225 230 235 240
 Phe Asn Trp Ala Lys Thr Glu Thr Pro Glu Asn Leu Ser Lys Lys Ser
 245 250 255
 Lys Gln Ile Ile Glu Tyr Ile Val Cys Tyr Gln Lys Lys Lys Asn Asp
 260 265 270
 Met Lys Phe Gln Gly Leu Lys Lys Glu Ser Val Ser Ser Asn Gly Leu
 275 280 285
 Leu Asn Gln Pro Asn Ser Val Gly Ile Leu Thr Phe Pro Ala Asn Lys
 290 295 300
 Val Val Thr Ser Ile Pro Asp Gly Val Ile Lys Ala Gly Met Tyr Gly
 305 310 315 320
 Thr Asp Ala Tyr Asp Val Glu Leu Leu Glu Asp Thr Thr Val Arg Gly
 325 330 335
 Gly Leu Phe Thr Ala Pro Val Lys Leu Lys Ala Lys Phe Lys Trp Ser
 340 345 350
 Gln Ala Asn Leu Asp Lys Glu Ile Gln Lys Gly Thr Thr Ile Lys Ile
 355 360 365
 Pro Thr Leu Lys Leu Ser Pro Ser Tyr Glu Lys Leu Glu Tyr Asp Pro
 370 375 380
 Glu Val Pro Pro Asn Leu Ile Asn Tyr Lys Val Gly Val Glu Thr Asn
 385 390 395 400
 Glu Gln Ala Gly Asn His Gln Leu Gln Phe Phe Asp Lys Lys Val Phe
 405 410 415
 Asn Phe Pro Lys Pro Val Ser Leu Ile Gln Tyr Leu Cys Glu Phe Ile
 420 425 430
 Asp Thr Lys Asn Lys Asp Cys Ile Val Met Asp Phe Phe Ser Gly Ser
 435 440 445
 Gly Thr Thr Ala Glu Ala Val Met Arg Met Asn Met Lys Pro Arg Lys

450 455 460
 Asn Lys Val Lys Tyr Ile Leu Val Gln Leu Pro Glu Asp Val Thr Glu
 465 470 475 480
 Thr Ile Lys Lys Ala Lys Thr Pro Ser Glu Lys Glu Ile Met Gln Asn
 485 490 495
 Ala Ile Asp Phe Leu Thr Glu Asn His Lys Ala Leu Asn Ile Cys Glu
 500 505 510
 Leu Ser Lys Glu Arg Ile Arg Arg Ala Gly Asp Thr Ile Glu Ala Glu
 515 520 525
 Cys Asn Gln Arg Lys Leu Lys Asp Leu Pro Asp Ile Gly Phe Arg Val
 530 535 540
 Phe Arg Ile Ala Asp Ser Asn Met Lys Asp Val Tyr Tyr Ser Ala Lys
 545 550 555 560
 Glu Tyr Ser Gln Ser Asp Leu Phe Tyr Phe Thr Asp Asn Ile Lys Glu
 565 570 575
 Asp Arg Thr Gly Leu Asp Leu Leu Tyr Gly Cys Leu Thr Asn Leu Gly
 580 585 590
 Leu Ser Leu Ser Leu Pro His Asp Glu Glu Asp Ile Asn Gly Tyr Thr
 595 600 605
 Val Tyr Ser Val Asp Lys Thr Glu Leu Met Ala Cys Phe Ala Glu Gln
 610 615 620
 Ile Pro Glu Lys Val Phe Arg Glu Ile Ala Gly Arg Gln Pro Arg Arg
 625 630 635 640
 Val Val Phe Arg Asp Ala Ser Phe Arg Asp Ser Ala Asp Arg Ile Asn
 645 650 655
 Ile Asp Glu Ile Phe Lys Thr Leu Ser Pro Gly Thr Thr Ile Glu Ile
 660 665 670
 Leu

<210> 6060
 <211> 296
 <212> PRT
 <213> B.fragilis

<400> 6060
 Val Asn Met Thr Ile Thr Val Phe Thr Pro Thr Phe Asn Arg Ala Thr
 1 5 10 15
 Leu Leu Pro Arg Leu Tyr Glu Ser Leu Val Asn Gln Thr Phe Leu Asp
 20 25 30
 Phe Glu Trp Leu Ile Val Asp Asp Gly Ser Thr Asp Asp Thr Phe Asn
 35 40 45
 Phe Ile Glu Ser Ile Lys Glu Asn Asp Lys Ile Asp Ile Gln Tyr Tyr
 50 55 60
 Tyr Gln Asn Asn Ala Gly Lys His Ala Ala Ile Asn Trp Gly Val Glu
 65 70 75 80
 Leu Ala Lys Gly Asp Leu Phe Phe Ile Val Asp Ser Asp Glu Val Met
 85 90 95
 Ile Glu Ser Gly Leu Gln Thr Ile Val Asp Val Tyr Lys Gln Val Ser
 100 105 110
 Asp Asn Asp Asn Phe Ala Gly Val Thr Gly Leu Lys Ser Phe Phe Ser
 115 120 125
 Gly Lys Thr Ile Gly Gly Glu Leu Asn Tyr Thr Tyr Leu Asp Cys Ser
 130 135 140
 Ala Ile Asp Tyr Asn Leu Lys Tyr Lys Tyr Gly Gly Glu Met Ala Val
 145 150 155 160
 Ala Tyr Arg Thr Lys Ile Leu Gln Lys Tyr Pro Phe Pro Ile Phe Glu
 165 170 175
 Gly Glu Lys Tyr Cys Gly Glu Gly Leu Ile Trp Tyr Lys Ile Ala Leu

180	185	190
His Tyr Lys Leu Arg Tyr Phe	Ala His Pro Ile Ile Leu Thr Glu Tyr	
195	200	205
Tyr Pro Asp Gly Leu Thr Ala Leu Gly Val Asn Lys Arg Met Glu Ser		
210	215	220
Pro Lys Thr Thr Leu Ala Thr Tyr Ser Glu Leu Ser Lys Met Asn Val		
225	230	235
Pro Phe Asn Ser Arg Ile Arg Tyr Ile Ile Asn Phe Trp Arg Phe Phe		
	245	250
Cys Cys Asp Lys Gln Arg Gly Phe Ala Cys Lys Leu Lys Leu Val Asn		
260	265	270
Lys Ser Thr Ile Leu Leu Phe Pro Leu Gly Tyr Cys Leu His Leu Ile		
275	280	285
Asp Ile Phe Lys Thr Lys Arg Arg		
290	295	

<210> 6061
 <211> 430
 <212> PRT
 <213> B.fragilis

<400> 6061

Arg Lys Glu Thr Asn Lys Phe Ile Glu Pro Ala Ile Leu Phe Pro Gln		
1	5	10
Lys Gln Tyr Leu Cys His Met Asn Ser Lys Leu Arg His Leu Leu Leu		
20	25	30
Ile Val Phe Ser Ile Phe Pro Ile Leu Thr Trp Gly Thr Glu Ser Pro		
35	40	45
Ser Thr Ala Asp Ser Ile Arg Ile Ser Leu Leu Thr Cys Ala Pro Gly		
50	55	60
Glu Glu Ile Tyr Ser Leu Phe Gly His Thr Ala Ile Arg Tyr Glu Glu		
65	70	75
Pro Ala Arg Gly Ile Asp Arg Val Tyr Asn Tyr Gly Leu Phe Ser Phe		
85	90	95
Asn Thr Pro Asn Phe Ile Leu Arg Phe Ala Leu Gly Lys Thr Asp Tyr		
100	105	110
Gln Leu Gly Val Glu Asp Tyr Arg Cys Phe Ala Ala Glu Tyr Glu Tyr		
115	120	125
Phe Gly Arg Ser Val Trp Gln Thr Leu Asn Leu Thr Val Glu Glu		
130	135	140
Gln Gln Gln Leu Ile Thr Leu Leu Glu Glu Asn Tyr Arg Pro Glu Asn		
145	150	155
Arg Ile Tyr Arg Tyr Asn Phe Phe Tyr Asp Asn Cys Ala Thr Arg Pro		
165	170	175
Arg Asp Lys Val Glu Glu Ser Leu Gln Lys Ser Gly Ser Gln Leu Leu		
180	185	190
Phe Ser Asn Ala His Thr Glu Asn Gly Glu Thr Lys Ser Tyr Arg Asp		
195	200	205
Ile Val His Gln Tyr Thr Lys Gly His Pro Trp Ala Gln Phe Gly Ile		
210	215	220
Asp Phe Cys Ile Gly Ser Gln Ala Asp His Pro Ile Asn Asp Arg Gln		
225	230	235
Met Met Phe Ala Pro Phe Tyr Leu Met Asp Ala Phe Ala Gly Ala Arg		
245	250	255
Ile Ala Asn Thr Ser Asp Asn Lys Ala Leu Val Ala Ser Thr Lys Lys		
260	265	270
Ile Ile Asp Cys Glu Pro Ala Val Ser Gly Ser Ala Glu Asn Asp Ile		
275	280	285
Trp Asn Met Leu Thr Pro Ile Arg Leu Ser Leu Leu Val Phe Ile Ala		

290		295		300
Ile Gly Met Ala Thr Val	Tyr Gly Leu Arg Lys	Lys Lys Ser Leu Trp		
305	310	315	320	
Gly Leu Asp Ile Ala Val	Phe Ala Ala Ala Gly	Ile Ala Gly Cys Ile		
	325	330	335	
Ile Ala Phe Leu Ala Leu	Phe Ser Glu His Pro	Thr Val Gly Ser Asn		
	340	345	350	
Tyr Leu Leu Phe Val Phe	His Pro Gly His Leu	Leu Cys Leu Pro Phe		
	355	360	365	
Phe Ile Asn Asp Glu Arg	Lys Arg Arg Lys Ser	Arg Tyr His Leu Leu		
	370	375	380	
Asn Cys Thr Val Leu Thr	Leu Phe Ile Val Leu	Phe Pro Val Ile Pro		
385	390	395	400	
Gln Asn Phe Asp Leu Ala	Val Leu Pro Leu Ala	Leu Cys Leu Leu Ile		
	405	410	415	
Arg Ser Ala Ser Asn Leu	Ile Leu Thr Tyr Lys	Lys Ala Lys		
	420	425	430	

<210> 6062
 <211> 133
 <212> PRT
 <213> B.fragilis

<400> 6062

Ser Val Tyr Phe	Lys Lys Gln Asn Lys	Leu Pro Gly Gln Ile Ile Gly
1	5	10 15
Asp Lys Met Lys	Leu Ile Gln Tyr Ile Ser	Thr Thr Tyr Val Arg Glu
	20	25 30
Glu Leu Tyr Asn	Pro Asp Asn Arg Asp	Leu Ile Asn Pro Lys Ser Pro
	35	40 45
Pro Glu Phe Ile	Ser Ser Gly Gly Pro	Phe Cys His Lys Val Glu Leu
	50	55 60
Glu Gly Phe Glu	Pro Ser Ser Lys Arg	Gly Asn His Lys Leu Ser Thr
65	70	75 80
Cys Leu Ser Leu	Pro Lys Phe Phe Val	Gln Glu Gln Asn Gln Ser His
	85	90 95
Gln Phe Leu Pro	Tyr Pro Leu Lys Phe	His Gln Lys Arg Lys Ala Thr
	100	105 110
Ser Asp Tyr Pro	Arg Cys Asn Cys Thr	Thr Glu Pro Glu Cys Phe Gly
	115	120 125
Ala Thr Ala Ser Glu		
130		

<210> 6063
 <211> 264
 <212> PRT
 <213> B.fragilis

<400> 6063

Ile Ile Leu Phe	Ser Tyr Phe Cys Ser	Arg Phe Phe Lys Arg Val Met
1	5	10 15
Ala Gln Phe Thr	Glu Glu Glu Lys Thr	Ile Arg Arg Ile Glu Lys Arg
	20	25 30
Phe Asn Lys Gly	Met Val Gln Tyr Gly	Leu Ile Glu Glu Gly Asp Lys
	35	40 45
Val Leu Val Gly	Leu Ser Gly Gly Lys	Asp Ser Leu Ala Leu Val Glu
	50	55 60
Leu Leu Gly Lys	Arg Ser His Ile Phe	Lys Pro Arg Phe Ser Val Val
65	70	75 80

Ala Val His Val Val Met Lys Asn Ile Pro Tyr Gln Ser Asp Trp Asp
85 90 95
Tyr Leu Arg Glu His Ala Glu Lys Asn Gly Val Pro Leu Val Val Tyr
100 105 110
Glu Thr Ser Phe Asp Pro Ser Thr Asp Thr Arg Lys Ser Pro Cys Phe
115 120 125
Leu Cys Ser Trp Asn Arg Arg Lys Ala Leu Phe Thr Val Ala Lys Glu
130 135 140
Gln Gly Cys Asn Lys Ile Ala Leu Gly His His Met Asp Asp Ile Leu
145 150 155 160
Glu Thr Leu Leu Met Asn Ile Thr Tyr Gln Gly Ala Phe Ser Thr Met
165 170 175
Pro Pro Arg Leu Val Met Asn Lys Phe Asp Met Thr Ile Ile Arg Pro
180 185 190
Met Cys Leu Val His Glu Ala Asp Leu Leu Glu Leu Ala Gln Ile Arg
195 200 205
Gly Tyr Arg Lys Gln Val Lys Asn Cys Pro Tyr Glu Ser Gln Ser Ser
210 215 220
Arg Ser Asp Met Lys Gly Ile Leu Arg Gln Leu Glu Lys Met Asn Pro
225 230 235 240
Glu Ala Arg Tyr Ser Leu Trp Gly Ser Met Thr Asn Val Gln Glu Glu
245 250 255
Leu Leu Pro Lys Glu Val Glu Phe
260

<210> 6064
<211> 62
<212> PRT
<213> B.fragilis

<400> 6064
Cys Ala Tyr Phe Phe Ala Gln Thr Ala Asp Arg Tyr Gln Trp Ile Thr
1 5 10 15
Pro Ala Gln Lys Arg Tyr Ile His Pro Glu Glu Gly Ser Lys Asn Glu
20 25 30
Phe Tyr Tyr Leu Gln Thr Glu His Ser Asn Pro Tyr Asp Arg Val Ser
35 40 45
Asn Cys Lys Leu Tyr Pro Ala Phe Gln Tyr Ser Glu Trp Gln
50 55 60

<210> 6065
<211> 388
<212> PRT
<213> B.fragilis

<400> 6065
Leu Val Met Ala Glu Ser Asn Phe Val Asp Tyr Val Lys Ile Tyr Cys
1 5 10 15
Arg Ser Gly Lys Gly Gly Arg Gly Ser Thr His Met Arg Arg Glu Lys
20 25 30
Tyr Thr Pro Asn Gly Gly Pro Asp Gly Gly Asp Gly Arg Gly Gly
35 40 45
His Val Ile Leu Arg Gly Asn Arg Asn Tyr Trp Thr Leu Leu His Leu
50 55 60
Arg Tyr Asp Arg His Ala Met Ala Gly His Gly Glu Ser Gly Ser Lys
65 70 75 80
Asn Arg Ser Phe Gly Lys Asp Gly Ala Asp Lys Ile Ile Glu Val Pro
85 90 95
Cys Gly Thr Val Val Tyr Asn Ala Glu Thr Gly Glu Tyr Val Cys Asp

100	105	110
Val Thr Glu His Gly Gln Glu	Val Ile Leu Leu Lys Gly Gly Arg Gly	
115	120	125
Gly Leu Gly Asn Trp His Phe Lys Thr Ala Thr Arg Gln Ala Pro Arg		
130	135	140
Phe Ala Gln Pro Gly Glu Pro Met Gln Glu Met Thr Val Ile Leu Glu		
145	150	155
Leu Lys Leu Leu Ala Asp Val Gly Leu Val Gly Phe Pro Asn Ala Gly		
165	170	175
Lys Ser Thr Leu Leu Ser Ala Ile Ser Ala Ala Lys Pro Lys Ile Ala		
180	185	190
Asp Tyr Pro Phe Thr Thr Leu Glu Pro Asn Leu Gly Ile Val Ser Tyr		
195	200	205
Arg Asp Gly Gln Ser Phe Val Met Ala Asp Ile Pro Gly Ile Ile Glu		
210	215	220
Gly Ala Ser Glu Gly Lys Gly Leu Gly Leu Arg Phe Leu Arg His Ile		
225	230	235
Glu Arg Asn Ser Leu Leu Leu Phe Met Ile Pro Ala Asp Ser Asp Asp		
245	250	255
Ile Arg Lys Asp Tyr Glu Val Leu Leu Asn Glu Leu Lys Thr Phe Asn		
260	265	270
Pro Glu Met Leu Asp Lys Gln Arg Val Leu Ala Ile Thr Lys Ser Asp		
275	280	285
Met Leu Asp Gln Glu Leu Met Asp Glu Ile Glu Pro Thr Leu Pro Glu		
290	295	300
Gly Ile Pro His Val Phe Ile Ser Ser Val Ser Gly Leu Gly Ile Ser		
305	310	315
Val Leu Lys Asp Ile Leu Trp Thr Glu Leu Asn Lys Glu Ser Asn Lys		
325	330	335
Ile Glu Ala Ile Val His Arg Pro Lys Asp Val Ser Arg Leu Gln Gln		
340	345	350
Glu Leu Lys Asp Met Gly Glu Asp Glu Glu Leu Asp Tyr Glu Tyr Glu		
355	360	365
Asp Asp Gly Asp Glu Asp Asp Leu Asp Tyr Glu Tyr Glu Glu Glu Asp		
370	375	380
Trp Glu Asp Lys		
385		

<210> 6066

<211> 119

<212> PRT

<213> B.fragilis

<400> 6066

Gln Tyr Met Ala Asp Val Lys Glu Lys Ile Asn Leu Leu Asp Val Ile		
1	5	10
Pro Phe Arg Ser Glu Asn Ile Thr Ala Glu Lys Gly Ser Asp Gly Thr		
20	25	30
Val Thr Ile Ala Phe Pro Arg Phe Lys Tyr Glu Trp Met Arg Arg Phe		
35	40	45
Leu Leu Pro Lys Gly Met Ser Ala Asp Ile His Val Arg Leu Glu Asp		
50	55	60
His Gly Thr Ala Val Trp Glu Leu Ile Asp Gly Lys Arg Thr Val Arg		
65	70	75
Arg Ile Ile Glu Glu Leu Ala Glu His Phe Asn Tyr Glu Glu Asn Tyr		
85	90	95
Glu Ser Arg Ile Thr Ala Tyr Ile Thr Gln Leu Gln Lys Asp Gly Phe		
100	105	110
Val Lys Leu Val Ile Glu Asn		

<210> 6067
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 6067

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
 275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
 290 295 300
 Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
 305 310 315 320
 Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
 325 330 335
 Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
 340 345 350
 Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
 355 360 365
 Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
 370 375 380
 Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
 385 390 395 400
 Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr

415

430

[illegible]

385 390 395 400
 Met Asn Asp Phe Leu Gly Tyr Thr Gly Thr Val Ile Val Leu Ala Val
 405 410 415
 Lys Glu Phe Phe Ser Pro Asp Ile Asn Trp Thr Ala Phe Tyr Asn Leu
 420 425 430
 Met Ala Gly Tyr Val Gly Ile Ile Cys Phe Val Ala Phe Val Cys Ser
 435 440 445
 Phe Ile Tyr Leu His Gln Arg Tyr Arg Arg Glu Asn Tyr Gly Lys Thr
 450 455 460
 Gly Val Phe Arg Lys Lys Glu Glu Glu Lys Glu Val Pro Asp Phe Val
 465 470 475 480
 Tyr

<210> 6069
 <211> 202
 <212> PRT
 <213> B.fragilis

<400> 6069
 Phe Ile Asn Tyr His Phe Asn Asp Met Thr Gly Leu Glu Ile Trp Leu
 1 5 10 15
 Leu Ala Ile Gly Leu Ala Met Asp Cys Leu Ala Val Ser Ile Ala Ser
 20 25 30
 Gly Ile Ile Leu Arg Arg Ile Gln Trp Arg Pro Met Leu Ile Met Ala
 35 40 45
 Phe Phe Phe Gly Leu Phe Gln Ala Ile Met Pro Leu Leu Gly Trp Leu
 50 55 60
 Gly Ala Ser Thr Phe Ser His Leu Ile Glu Ser Val Asp His Trp Ile
 65 70 75 80
 Ala Phe Ala Ile Leu Ala Phe Leu Gly Gly Arg Met Ile Lys Glu Ser
 85 90 95
 Phe Lys Glu Glu Asp Cys Cys Gln Arg Phe Asn Pro Ala Ser Leu Lys
 100 105 110
 Val Val Ile Thr Met Ala Val Ala Thr Ser Ile Asp Ala Leu Ala Val
 115 120 125
 Gly Val Ser Phe Ala Phe Leu Gly Ile Lys Ser Cys Ser Ser Ile Leu
 130 135 140
 Tyr Pro Ala Gly Ile Ile Gly Phe Val Ser Phe Phe Met Ser Leu Ile
 145 150 155 160
 Gly Leu Ile Phe Gly Ile Arg Phe Gly Cys Gly Ile Ala Arg Lys Leu
 165 170 175
 Arg Ala Glu Leu Trp Gly Gly Ile Ile Leu Ile Leu Ile Gly Thr Lys
 180 185 190
 Ile Leu Ile Glu His Leu Phe Phe Asn Asn
 195 200

<210> 6070
 <211> 357
 <212> PRT
 <213> B.fragilis

<400> 6070
 Asn Ile Ser Tyr Trp Asn Phe Met Lys Leu Leu Val Thr Gly Ala Ala
 1 5 10 15
 Gly Phe Ile Gly Ser His Val Cys Lys Arg Leu Leu Gln Arg Gly Asp
 20 25 30
 Glu Val Val Gly Leu Asp Asn Ile Asn Ser Tyr Tyr Asp Ile Asn Leu
 35 40 45

Lys Tyr Gly Arg Leu Ser Ser Leu Gly Val Ser Gln Ser Glu Leu Ser
 50 55 60
 Trp Tyr Lys Phe Thr Arg Ser Asn Val Tyr Pro Arg Phe Ser Phe Val
 65 70 75 80
 Arg Met Asn Leu Glu Asp Arg Gln Ala Met Gln Met Leu Phe Ala Asn
 85 90 95
 Gly Asn Phe Asp Val Val Ile Asn Leu Ala Ala Gln Ala Gly Val Arg
 100 105 110
 Tyr Ser Ile Glu Asn Pro Tyr Ala Tyr Val Glu Ser Asn Ile Asp Gly
 115 120 125
 Phe Leu Asn Val Leu Glu Gly Cys Arg His Ser Gln Val Lys His Leu
 130 135 140
 Val Tyr Ala Ser Ser Ser Ser Val Tyr Gly Leu Asn Gly Gln Val Pro
 145 150 155 160
 Phe Ser Glu Lys Asp Gly Ile Ala His Pro Val Ser Leu Tyr Ala Ala
 165 170 175
 Thr Lys Lys Ser Asn Glu Leu Met Ala His Thr Tyr Ser His Leu Tyr
 180 185 190
 Asn Ile Pro Ser Thr Gly Leu Arg Phe Phe Thr Val Tyr Gly Pro Trp
 195 200 205
 Gly Arg Pro Asp Met Ser Pro Phe Leu Phe Ala Asp Ala Ile Leu His
 210 215 220
 Gly Arg Pro Ile Lys Val Phe Asn Asn Gly Asn Met Leu Arg Asp Phe
 225 230 235 240
 Thr Tyr Ile Asp Asp Ile Val Glu Gly Val Leu Arg Val Ala Asp Ser
 245 250 255
 Ile Pro Glu Gly Asn Gln Cys Trp Asp Ala Glu Val Ala Asp Pro Ser
 260 265 270
 Met Ser Cys Ala Pro Tyr Lys Ile Tyr Asn Ile Gly Asn Ser Arg Pro
 275 280 285
 Val Lys Leu Met Asp Phe Ile Arg Ala Ile Glu Met Ser Ile Gly Arg
 290 295 300
 Glu Ala Asp Lys Ile Tyr Leu Pro Met Gln Pro Gly Asp Val Tyr Gln
 305 310 315 320
 Thr Tyr Ala Asp Thr Ser Ser Leu Ser Arg Glu Ile Gly Phe Gln Pro
 325 330 335
 Asn Thr Ser Leu Glu Ala Gly Val Lys Glu Thr Ile Ser Trp Tyr Lys
 340 345 350
 Glu Phe Tyr Asn Leu
 355

<210> 6071

<211> 355

<212> PRT

<213> B.fragilis

<400> 6071

Lys Lys Ile Leu Asn Tyr Lys Gly Phe Val Ser Gly Gly Ser Ser Glu
 1 5 10 15
 Thr Met Ser Trp Leu Phe Ile Arg Lys Leu Ile Cys Leu His Lys Gly
 20 25 30
 Lys Ile Lys Phe Ala Tyr Lys Glu Gln Lys Leu Val Leu Ile Leu
 35 40 45
 Ile Phe Pro Ile Val Ile Arg Gln Ser Glu Arg Val Ser Glu Phe Ser
 50 55 60
 Gly Ile Leu Ser Val Pro Glu Leu Ser Thr Gly Asn Gly Glu Leu Leu
 65 70 75 80
 Ser Val Thr Gly Met Leu Pro Thr Val Lys Thr Ser Glu Gln Lys Arg
 85 90 95

Pro Asp Lys Lys Lys Glu Lys His Ser Leu Val Leu Val Glu Arg Asn
 100 105 110
 Lys Asp Leu Cys Asn Tyr Leu Val Gln Ile Leu Met Lys Glu Tyr Lys
 115 120 125
 Ile Val Ser Val Cys Asp Ala Glu Ala Ala Phe Glu Thr Val Cys Glu
 130 135 140
 Gln Cys Pro Asp Ala Val Leu Ala Ser Ser Val Leu Thr Arg Ile Ser
 145 150 155 160
 Gly Glu Glu Leu Ala Val Arg Ile Lys Ser Asp Asp Arg Val Ala His
 165 170 175
 Ile Pro Val Ile Leu Leu Val Lys Pro Gly Glu Asp Asp Arg Tyr Ile
 180 185 190
 Gln Arg Asn Ala Asp Leu Tyr Val Trp Met Pro Phe Ala Ile Ser Ser
 195 200 205
 Leu Lys Thr Glu Ile Ala Ala Leu Ile Ala Asn Arg Glu Met Ile Arg
 210 215 220
 Lys Arg Tyr Ile Arg Leu Ala Leu Gly Gly Glu Ala Ser Asp Pro Ile
 225 230 235 240
 Asp Lys Glu Val Glu Ser Ser Glu Gly Asp Gln Glu Phe Ile Arg Gln
 245 250 255
 Val Arg Ser Leu Ile Glu Glu Arg Met Thr Asp Ser Gly Phe Lys Ile
 260 265 270
 Gly Glu Leu Ser Asp Cys Met Asn Met Ser Arg Ser Ser Phe Tyr Asn
 275 280 285
 Lys Ile Lys Glu Ile Thr Gly His Ala Pro Ala Asp Tyr Val Arg Asn
 290 295 300
 Val Arg Leu Asn Arg Ala Leu Val Leu Leu Met Ser Arg Lys Tyr Thr
 305 310 315 320
 Val Ala Glu Val Ala Asp Met Thr Gly Phe Ser Asp Pro Lys Tyr Phe
 325 330 335
 Gly Ile Val Phe Lys Lys Tyr Tyr Gly Gly Ser Pro Thr Lys Tyr Ile
 340 345 350
 Asn Asn Leu
 355

<210> 6072

<211> 163

<212> PRT

<213> B.fragilis

<400> 6072

Ile Val Ala Tyr Gln Leu Thr Ala Ile Pro Asp Ala Leu Ser Gln Phe
 1 5 10 15
 Leu Pro Ala Phe Pro Val Ile Phe Ala His Thr Ile Leu Asn Gly Ile
 20 25 30
 Asn Arg Ile Phe Val Asp Lys Phe Phe Gln Ile Val Asn Leu Phe Val
 35 40 45
 Ser Cys Thr Phe Phe Ala Phe Phe Thr Phe Lys Phe Gly Val Ile Val
 50 55 60
 Asn Thr Val Met Ile Glu Phe Gly Arg Gly Ala Val His Ala Asn His
 65 70 75 80
 Tyr Ile Phe Ala Arg Phe Val Ala Cys Ser Phe Asp Ser Gly Lys Asn
 85 90 95
 Arg Val Lys Cys Ile Phe Cys Ser Phe Gln Val Gly Ser Lys Thr Ala
 100 105 110
 Phe Ile Thr Asn Ser Cys Thr Gln Thr Thr Val Phe Gln Tyr Phe Phe
 115 120 125
 Gln Ser Met Glu Tyr Phe Gly Thr His Ala Gln Pro Phe Phe Lys Arg
 130 135 140

Thr Cys Thr Tyr Arg Thr Asp His Lys Leu Leu Glu Gly Tyr Arg Ser
 145 150 155 160
 Ile Thr Val

<210> 6073

<211> 319

<212> PRT

<213> B.fragilis

<400> 6073

Leu Met Tyr Tyr Leu Ile Ile Leu Val Leu Leu Phe Leu Ala Glu Leu
 1 5 10 15
 Phe Tyr Phe Arg Ile Ala Asp Lys Cys Asn Ile Ile Asp Lys Pro Asn
 20 25 30
 Glu Arg Ser Ser His Thr Arg Ile Thr Leu Arg Gly Gly Gly Ile Ile
 35 40 45
 Phe Tyr Phe Gly Glu Leu Ala Tyr Phe Leu Thr Asn His Phe Glu Tyr
 50 55 60
 Pro Trp Phe Met Leu Ala Leu Ser Leu Ile Thr Phe Ile Ser Phe Ile
 65 70 75 80
 Asp Asp Ile Arg Ser Thr Ser Gln Gly Leu Arg Leu Val Phe His Phe
 85 90 95
 Thr Ala Met Ala Leu Met Phe Tyr Gln Trp Gly Leu Phe Ser Leu Pro
 100 105 110
 Trp Trp Thr Ile Leu Val Ala Leu Ile Ile Cys Thr Gly Ile Ile Asn
 115 120 125
 Ala Tyr Asn Phe Met Asp Gly Ile Asn Gly Ile Thr Gly Gly Tyr Ser
 130 135 140
 Leu Ile Ile Leu Ile Ala Leu Ala Tyr Ile Asn Arg Ile Tyr Val Pro
 145 150 155 160
 Phe Val Glu Pro Asp Leu Ile Tyr Thr Met Leu Cys Ala Val Leu Val
 165 170 175
 Phe Asn Phe Phe Asn Phe Arg Lys Gln Ala Arg Cys Phe Ala Gly Asp
 180 185 190
 Val Gly Ser Val Ser Ile Ala Phe Val Ile Leu Phe Leu Ile Gly Ser
 195 200 205
 Leu Ile Ile Lys Thr Glu Asn Phe Gly Trp Leu Ile Leu Leu Ala Val
 210 215 220
 Tyr Gly Val Asp Ser Val Leu Thr Ile Val His Arg Leu Met Leu His
 225 230 235 240
 Glu Asn Ile Gly Leu Pro His Arg Lys His Leu Tyr Gln Ile Met Ala
 245 250 255
 Asn Glu Leu Arg Ile Pro His Val Val Val Ser Leu Val Tyr Met Ile
 260 265 270
 Ala Gln Ile Ile Ile Ile Ile Gly Tyr Leu Tyr Cys Gln Asn Tyr Gly
 275 280 285
 Tyr Trp Tyr Leu Leu Gly Cys Ile Leu Leu Leu Ser Gly Ile Tyr Ile
 290 295 300
 Val Phe Met His Lys Tyr Phe His Leu His Leu Leu Ser Lys Arg
 305 310 315

<210> 6074

<211> 256

<212> PRT

<213> B.fragilis

<400> 6074

Ile Leu Ser Leu Ile Phe Ala Pro Ser Asn Arg Glu Lys Val Asn Leu

1	5	10	15
Ile Ile Asp	Ile Gly Asn Thr Val	Ala Lys Val Ala Leu Phe	Asp Arg
20	25	30	
Thr Ser Met	Val Glu Val Val Tyr	Asp Ser Asn Gln Ser Leu	Asp Ser
35	40	45	
Leu Glu Ala	Val Cys Asn Lys Tyr	Asp Val Arg Lys Ala Ile	Val Ala
50	55	60	
Thr Val Ile	Asp Leu Asn Glu Cys Val	Leu Ala Gln Leu Asn Lys	Leu
65	70	75	80
Pro Val Pro	Val Leu Trp Leu Asp	Ser His Thr Pro Leu Pro	Val Ile
85	90	95	
Asn Leu Tyr	Glu Thr Pro Glu Thr	Leu Gly Tyr Asp Arg Met	Ala Ala
100	105	110	
Val Val Ala	Ala His Asp Gln Phe	Pro Gly Lys Asp Ile Leu	Val Ile
115	120	125	
Asp Ala Gly	Thr Cys Ile Thr Tyr	Glu Phe Val Asp Ser Leu	Gly Gln
130	135	140	
Tyr His Gly	Gly Asn Ile Ser Pro	Gly Leu Trp Met Arg Leu	Lys Ala
145	150	155	160
Leu His Gln	Phe Thr Gly Arg Leu	Pro Leu Val His Ala	Glu Gly Arg
165	170	175	
Met Pro Asp	Met Gly Lys Asp Thr	Glu Thr Ala Ile Arg Ala	Gly Val
180	185	190	
Lys Lys Gly	Ile Glu Tyr Glu Ile	Thr Gly Tyr Ile Thr Ala	Met Lys
195	200	205	
His Lys Tyr	Pro Glu Leu Leu Val	Phe Leu Thr Gly Gly Asp	Asp Phe
210	215	220	
Ser Phe Asp	Thr Lys Leu Lys Ser	Val Ile Phe Ala Asp Arg	Phe Leu
225	230	235	240
Val Leu Lys	Gly Leu Asn Arg Ile	Leu Asn Tyr Asn Asn	Gly Arg Ile
245	250	255	

<210> 6075
 <211> 223
 <212> PRT
 <213> B.fragilis

<400> 6075
Phe Ile Met Tyr Thr Ile Ile Val Ser Lys Glu Leu Lys Glu Ala Cys
1 5 10 15
Pro Val Phe Ala Gly Ala Ala Ile Tyr Ala Glu Val Lys Asn Thr Ser
20 25 30
Tyr Cys Glu Gly Leu Trp Glu Glu Ile Gln Ser Phe Thr Glu Met Leu
35 40 45
Thr Ala Thr Thr Arg Leu Glu Asp Ile Lys Lys Gln Pro Val Ile Ala
50 55 60
Ala Thr Arg Glu Ala Tyr Lys Arg Cys Gly Lys Asp Pro Gly Arg Tyr
65 70 75 80
Arg Pro Ser Ala Glu Ala Leu Arg Arg Arg Leu Met Arg Gly Ile Ala
85 90 95
Leu Tyr Gln Ile Asp Thr Leu Val Asp Leu Ile Asn Leu Val Ser Leu
100 105 110
Arg Thr Gly His Ser Ile Gly Gly Phe Asp Ala Asp Lys Ile Ala Gly
115 120 125
Thr Gly Leu Glu Leu Gly Ile Gly Lys Ile Asn Glu Pro Phe Glu Gly
130 135 140
Ile Gly Arg Gly Val Leu Asn Ile Glu Gly Leu Pro Val Tyr Arg Asp
145 150 155 160
Ala Val Gly Gly Ile Gly Thr Pro Thr Ser Asp Asn Glu Arg Thr Lys

<400> 6076															
Ile	Tyr	Val	Tyr	Trp	Thr	Val	Met	Met	Asn	Ile	Leu	Val	Thr	Gly	Ile
1				5					10					15	
His	Gly	Phe	Val	Gly	Ser	Asn	Leu	Val	Glu	Ala	Leu	Lys	Glu	Asn	Cys
			20					25					30		
Ile	Phe	Tyr	Gly	Leu	Asp	Ile	Val	Ser	Pro	Ala	Lys	Glu	Gly	Val	Val
		35				40						45			
Thr	Thr	Phe	Ser	Trp	Leu	Asp	Ile	Glu	Pro	Thr	Ser	Phe	Pro	Phe	Gln
	50					55					60				
Thr	Leu	Pro	Gln	Phe	Asp	Ala	Ile	Ile	His	Leu	Ala	Gly	Lys	Ala	His
65					70					75					80
Asp	Thr	Lys	Asn	Gln	Ser	Ala	Ala	Gln	Ser	Tyr	Phe	Asp	Ile	Asn	Thr
			85						90					95	
Gly	Leu	Thr	Gln	Lys	Ile	Phe	Asp	Phe	Phe	Leu	Glu	Ser	Ser	Ala	Lys
			100					105					110		
Lys	Phe	Ile	Phe	Phe	Ser	Ser	Val	Lys	Ala	Ala	Ala	Asp	Ser	Val	Val
		115					120					125			
Gly	Asp	Val	Leu	Thr	Glu	Asp	Val	Ile	Pro	Thr	Pro	Val	Gly	Pro	Tyr
	130					135					140				
Gly	Glu	Ser	Lys	Ile	Lys	Ala	Glu	Glu	Tyr	Ile	Lys	Asn	His	Phe	Met
145					150					155					160
Phe	Pro	Thr	Val	Ser	Ile	Ser	Glu	Asp	Arg	Ser	Leu	Arg	Leu	Glu	Lys
			165						170					175	
Glu	Lys	Gly	Arg	Ile	Pro	Lys	Asn	Lys	Gln	Val	Tyr	Ile	Leu	Arg	Pro
			180					185					190		
Cys	Met	Ile	His	Gly	Pro	Gly	Asn	Lys	Gly	Asn	Leu	Asn	Leu	Leu	Tyr
		195					200					205			
Asn	Val	Val	Lys	Lys	Gly	Ile	Pro	Trp	Pro	Leu	Gly	Asp	Phe	Asp	Asn
	210					215					220				
Arg	Arg	Ser	Phe	Thr	Ser	Ile	Asp	Asn	Leu	Cys	Tyr	Val	Ile	Glu	Gly
225					230					235					240
Leu	Leu	Asn	Gln	Asp	Val	Leu	Thr	Gly	Ile	Tyr	His	Met	Gly	Asp	Asp
			245						250					255	
Glu	Ala	Leu	Ser	Thr	Asn	Glu	Leu	Ile	Gly	Ile	Met	Cys	Glu	Ala	Met
			260					265					270		
Gly	Lys	Lys	Pro	His	Ile	Trp	Lys	Met	Asn	Lys	Arg	Val	Met	Glu	Gly
		275					280					285			
Cys	Ala	Gly	Leu	Gly	Thr	Leu	Met	His	Leu	Pro	Leu	Asn	Thr	Glu	Arg
	290					295					300				
Leu	Arg	Lys	Leu	Thr	Glu	Asn	Tyr	Val	Val	Ser	Asn	Ala	Lys	Ile	Lys
305					310					315					320
Ala	Ala	Leu	Gly	Ile	Asp	Lys	Leu	Pro	Val	Thr	Ala	Lys	Glu	Gly	Leu
			325						330					335	
Met	Lys	Thr	Ile	Arg	Ser	Phe	Glu	Glu	Thr	Lys					
			340					345							

[illegible]

<210> 6077
 <211> 342
 <212> PRT
 <213> B.fragilis

<400> 6077

Tyr Arg Asp Leu Tyr Ser Ser Trp Ile Glu Ala Leu Ala Ile Tyr Val
 1 5 10 15
 Phe Tyr Asp Lys Pro Ile Arg Cys Gly Lys Val Thr His Cys Leu Ser
 20 25 30
 Asn Gly Ile Leu Phe Tyr Leu Gln Tyr Ile Ser Val Tyr Leu His Ser
 35 40 45
 Glu Ser Lys Trp Ile Phe Met Ala Ile Leu Glu Arg Lys Ile Ile His
 50 55 60
 Glu Ile Asp Thr Ser Cys Ser His Ile Ile Tyr Pro Gln Phe Val Leu
 65 70 75 80
 Pro Arg His Lys His Ala Glu Tyr Glu Ile Met Leu Phe Thr Gln Gly
 85 90 95
 Ser Gly Lys Gln Phe Val Gly Glu Gly Val Ala Asp Phe Gln Glu Gly
 100 105 110
 Asp Ile Ala Leu Ile Gly Ser Asn Val Pro His Leu His Leu Cys Asn
 115 120 125
 Ser Lys Leu Asn Pro Val Ala Asn Thr Val Cys Ser Ala Gly Glu Ala
 130 135 140
 Leu Gln Phe Leu Pro Asp Ile Phe Pro Val His Val Glu Asn Leu Pro
 145 150 155 160
 Asp Tyr Gln Glu Ile Tyr Arg Leu Leu Arg Lys Ser Gln Tyr Gly Val
 165 170 175
 Arg Phe Tyr Asp Lys Gly Leu Tyr Asp Glu Val Lys Glu Leu Phe Gln
 180 185 190
 Glu Met Asp Leu Leu Lys His Thr Asn Arg Leu Ile Thr Ile Leu Arg
 195 200 205
 Ile Leu Gly Arg Leu Thr Glu Cys Arg Asn Ile Lys Leu Leu Ser Asp
 210 215 220
 Val Ala Tyr Asn Gly Ser Asn Arg Leu Leu Glu Val Asn Glu Pro Val
 225 230 235 240
 Asn Lys Val Tyr Thr Tyr Leu Phe Asn His Phe Lys Glu Lys Val Leu
 245 250 255
 Leu Gln Glu Val Ala Asp Tyr Val Lys Gln Asn Pro Ser Ala Leu Cys
 260 265 270
 Arg Tyr Phe Lys Gln Arg Thr Asp Lys Ser Ile Phe Gln Cys Leu Ala
 275 280 285
 Glu Ile Arg Ile Glu His Ala Cys Lys Leu Leu Ser Tyr Ser Asn Leu
 290 295 300
 Ser Val Ser Gln Ile Ala Phe Glu Ser Gly Phe Asn Ser Val Pro Tyr
 305 310 315 320
 Phe Ile Lys Gln Phe Gln Ser Ile Thr Glu Lys Thr Pro Gly Glu Tyr
 325 330 335
 Arg Glu Leu Ile Gly Arg
 340

<210> 6078
 <211> 362
 <212> PRT
 <213> B.fragilis

<400> 6078

Asn Ile Tyr His Leu Lys His Ile Asn Met Lys Val Leu Tyr Ile Gly
 1 5 10 15

Tyr Asp Lys Lys Leu Val Lys Ser Gly Ala Asp Gln Ile Asp Ile Arg
 20 25 30
 Asn Leu Glu Leu Leu Tyr Asp Ser Ile Pro Tyr Val Lys Val Leu Pro
 35 40 45
 Val Leu Glu Thr Arg Ser Phe Tyr Lys Arg Tyr Leu Phe Gly Ile Asp
 50 55 60
 Ser Leu Leu Ile Gln Lys Val Phe Ala Glu Leu Gln Thr Gly Asp Tyr
 65 70 75 80
 Gln Leu Val Phe Val Ser Gln Ser Leu Met Gly Arg Ile Ser Lys His
 85 90 95
 Ile Lys Cys Asp Phe Pro Asn Ile Lys Ile Ile Thr Phe Phe His Asn
 100 105 110
 Ile Glu Lys Tyr Tyr Ala Leu Glu Leu Leu Arg Val Ser Gly Phe Thr
 115 120 125
 His Tyr Leu Phe Tyr Leu Ala Ala Ser Tyr Phe Glu Phe Gln Ser Val
 130 135 140
 Lys Tyr Ser Asp Tyr Leu Ile Val Leu Asn Gln Arg Glu Ser Asn Leu
 145 150 155 160
 Leu Gln Lys Ile Tyr Asn Lys Ser Ala Asp Leu Ile Leu Pro Thr Ser
 165 170 175
 Phe Lys Asp Gln Cys Ser Lys Ile Glu Asn Cys Asn Ile Arg Lys Glu
 180 185 190
 Phe Val Tyr Leu Phe Val Gly Ala Ala Phe Phe Ala Asn Ile Gln Gly
 195 200 205
 Ile Lys Trp Phe Ile Ser Asn Val Leu Pro Glu Val His Gly Lys Leu
 210 215 220
 Ile Ile Val Gly Lys Gly Met Asp Leu Tyr Arg Glu Glu Phe Ala Ser
 225 230 235 240
 Glu Arg Val Glu Val Tyr Gly Tyr Val Gln Asn Leu Ser Glu Tyr Tyr
 245 250 255
 Ser Met Ala Ser Val Val Ile Ser Pro Ile Phe Ser Gly Gly Gly Met
 260 265 270
 Lys Thr Lys Val Ala Glu Ala Phe Met Tyr Gly Lys Val Val Val Gly
 275 280 285
 Thr Lys Glu Ala Phe Thr Gly Tyr Val Asn Cys Ser Gly Val Met Tyr
 290 295 300
 Glu Cys Asn Asp Lys Tyr Ala Phe Val Lys Ile Leu Asn Glu Leu Phe
 305 310 315 320
 Val Asp Lys Thr His Thr Val Phe Asn Ser Lys Ala Arg Glu Ile Tyr
 325 330 335
 Leu Gln Glu Tyr Ser Tyr Glu Ser Ser Tyr Ser Lys Phe Ser Arg Trp
 340 345 350
 Ile Ser Pro Ile Leu Lys Leu Leu Asn Lys
 355 360

<210> 6079

<211> 466

<212> PRT

<213> B.fragilis

<400> 6079

Ile Met Asn Gln Asp Thr Ile Cys Ala Ile Ala Thr Ala Gln Gly Gly
 1 5 10 15
 Ala Ile Gly Ser Ile Arg Val Ser Gly Pro Glu Ala Ile Thr Ile Thr
 20 25 30
 Gly Arg Ile Phe Thr Pro Ala Lys Ser Gly Lys Leu Leu Ser Glu Gln
 35 40 45
 Lys Pro Tyr Thr Leu Thr Phe Gly Arg Ile Tyr Asn Gly Glu Glu Met
 50 55 60

Ile	Asp	Glu	Val	Leu	Val	Ser	Leu	Phe	Arg	Ala	Pro	His	Ser	Tyr	Thr
65					70					75					80
Gly	Glu	Asp	Ser	Thr	Glu	Ile	Thr	Cys	His	Gly	Ser	Ser	Tyr	Ile	Leu
				85					90					95	
Gln	Gln	Val	Met	Gln	Leu	Leu	Ile	Lys	Asn	Gly	Cys	Arg	Met	Ala	Gln
			100					105					110		
Pro	Gly	Glu	Tyr	Thr	Gln	Arg	Ala	Phe	Leu	Asn	Gly	Lys	Met	Asp	Leu
		115					120					125			
Ser	Gln	Ala	Glu	Ala	Val	Ala	Asp	Leu	Ile	Ala	Ser	Ser	Ser	Ala	Ala
	130					135					140				
Thr	His	Arg	Leu	Ala	Leu	Ser	Gln	Met	Arg	Gly	Gly	Phe	Ser	Lys	Glu
145					150					155					160
Leu	Thr	Thr	Leu	Arg	Glu	Lys	Leu	Leu	Asn	Phe	Thr	Ser	Met	Ile	Glu
			165						170					175	
Leu	Glu	Leu	Asp	Phe	Ser	Glu	Glu	Asp	Val	Glu	Phe	Ala	Asp	Arg	Ser
			180					185					190		
Ala	Leu	Arg	Arg	Leu	Ala	Asp	Glu	Ile	Glu	Glu	Val	Ile	Ala	Arg	Leu
	195					200						205			
Ala	Asn	Ser	Phe	Ser	Val	Gly	Asn	Val	Ile	Lys	Asn	Gly	Val	Pro	Val
	210					215					220				
Ala	Ile	Ile	Gly	Glu	Thr	Asn	Ala	Gly	Lys	Ser	Thr	Leu	Leu	Asn	Val
225				230					235					240	
Leu	Leu	Asn	Glu	Asp	Lys	Ala	Ile	Val	Ser	Asp	Ile	His	Gly	Thr	Thr
			245					250					255		
Arg	Asp	Val	Ile	Glu	Asp	Thr	Val	Asn	Ile	Gly	Gly	Ile	Thr	Phe	Arg
		260					265						270		
Phe	Ile	Asp	Thr	Ala	Gly	Ile	Arg	Glu	Thr	Ser	Asp	Thr	Ile	Glu	Ser
	275					280						285			
Leu	Gly	Ile	Glu	Arg	Thr	Phe	Gln	Lys	Leu	Asp	Gln	Ala	Glu	Ile	Val
	290					295					300				
Leu	Trp	Met	Ile	Asp	Ser	Ala	Asp	Ala	Ile	Ser	Gln	Leu	Thr	Leu	Leu
305				310						315				320	
Ser	Asp	Lys	Ile	Leu	Pro	Arg	Cys	Glu	His	Lys	Gln	Leu	Ile	Leu	Val
			325					330					335		
Phe	Asn	Lys	Val	Glu	Leu	Ile	Asn	Glu	Thr	Gln	Lys	Asn	Glu	Leu	Thr
	340						345					350			
Ser	Gln	Phe	Ser	Glu	His	Ile	Gly	Ser	Glu	Ile	Glu	Ser	Ile	Phe	Ile
	355					360						365			
Ser	Ala	Lys	Gln	Arg	Leu	His	Thr	Asp	Glu	Leu	Gln	Gln	Arg	Leu	Val
	370				375						380				
Ala	Ala	Ala	His	Leu	Pro	Thr	Val	Thr	Gln	Asn	Asp	Val	Ile	Val	Thr
385				390						395					400
Asn	Val	Arg	His	Tyr	Glu	Ala	Leu	Thr	Arg	Ala	Leu	Asp	Ala	Ile	His
			405					410						415	
Arg	Val	Gln	Glu	Gly	Leu	Asp	Ala	Asn	Ile	Ser	Gly	Asp	Phe	Leu	Ser
		420					425						430		
Gln	Asp	Ile	Arg	Glu	Cys	Ile	Phe	His	Leu	Ser	Asp	Ile	Ala	Gly	Glu
	435					440					445				
Val	Thr	Asn	Asp	Met	Val	Leu	Gln	Asn	Ile	Phe	Ala	His	Phe	Cys	Ile
	450				455						460				
Gly	Lys														
465															

<210> 6080

<211> 215

<212> PRT

<213> B.fragilis

<400> 6080

Ile Ser Arg Gln Met Asn Lys Arg Gly Phe Val Ser Arg Ile Leu Gln
 1 5 10 15
 Asn Phe Arg Lys Pro Glu Gly Phe Phe Gly Arg Met Ile Leu Trp Gly
 20 25 30
 Met Asn Thr Gly His Ala Ser Leu Ala Gln Trp Gly Met Ser Cys Leu
 35 40 45
 Gln Trp Gln Pro Glu Trp Ser Val Leu Asp Ile Gly Cys Gly Gly Gly
 50 55 60
 Ala Asn Leu Leu Gln Ile Leu Gln Arg Cys Pro Gln Gly Lys Ala Tyr
 65 70 75 80
 Gly Ile Asp Ile Ser Ser Glu Ser Val Thr Phe Ala Arg Lys Lys Asn
 85 90 95
 Lys Lys Tyr Leu Gly Thr Arg Cys Phe Ile Glu Gln Gly Gly Val His
 100 105 110
 Arg Leu Pro Tyr Pro Asp Tyr Ala Phe Asp Ala Val Thr Ala Phe Glu
 115 120 125
 Thr Val Tyr Phe Trp Gly Asn Leu Gln His Ala Phe Thr Glu Val Ala
 130 135 140
 Arg Val Leu Lys Pro Gly Gly Ser Phe Leu Ile Cys Cys Glu Ile Ser
 145 150 155 160
 Asp Pro Ala Asn Lys Ala Trp Thr Gly Leu Val Glu Gly Met Glu Ile
 165 170 175
 His Ser Cys Asp Glu Leu Lys Ala Ile Leu Ser Lys Ser Gly Phe Thr
 180 185 190
 Asp Thr Ala Ile Phe Arg Thr Lys Lys Glu Glu Leu Cys Leu Val Ser
 195 200 205
 His Arg Gln Thr Val Arg Leu
 210 215

<210> 6081

<211> 522

<212> PRT

<213> B.fragilis

<400> 6081

Lys Met Arg Gln Tyr Val Leu Leu Ala Cys Leu Ser Pro Val Ala Cys
 1 5 10 15
 Leu Met Ala Ala Thr Gly Gln Lys Gly Lys Ala Lys Gln Lys Ile
 20 25 30
 Asn Asp Arg Gln Leu Pro Asn Val Val Phe Ile Tyr Ala Asp Asp Leu
 35 40 45
 Gly Tyr Gly Asp Leu Glu Cys Tyr Gly Ala Lys Asn Val Gln Thr Pro
 50 55 60
 Asn Val Asn Arg Leu Ala Ala Glu Gly Ile Arg Phe Asn Asn Ala His
 65 70 75 80
 Ala Thr Ala Ala Thr Ser Thr Pro Ser Arg Tyr Ser Met Leu Thr Gly
 85 90 95
 Glu Tyr Ala Trp Arg Arg Pro Gly Thr Asp Ile Ala Ala Gly Asn Ala
 100 105 110
 Gly Met Ile Ile Arg Pro Glu Arg Tyr Thr Met Ala Asp Met Phe Lys
 115 120 125
 Asn Ala Gly Tyr Ala Thr Ala Ala Ile Gly Lys Trp His Leu Gly Leu
 130 135 140
 Gly Asp Lys Asp Gly Glu Gln Asp Trp Asn Ala Pro Leu Pro Thr Ala
 145 150 155 160
 Leu Gly Asp Ile Gly Phe Asp Tyr Ser Tyr Ile Met Ala Ala Thr Ala
 165 170 175
 Asp Arg Val Pro Cys Val Phe Ile Glu Asn Gly Lys Val Ala Asn Tyr
 180 185 190

Asp Pro Ser Ala Pro Ile Glu Val Ser Tyr Arg Lys Pro Ile Glu Gly
 195 200 205
 Glu Pro Leu Gly Lys Asp His Pro Glu Leu Leu Phe Asn Leu Lys Ser
 210 215 220
 Ser His Gly His Asp Met Ala Ile Val Asn Gly Ile Cys Arg Ile Gly
 225 230 235 240
 Tyr Met Lys Gly Gly Gly Lys Ala Leu Arg Lys Asp Glu Asn Ile Ala
 245 250 255
 Asp Ser Ile Thr Ser His Ala Ile Gly Phe Ile Arg Glu His Asn Asp
 260 265 270
 Glu Pro Phe Phe Met Tyr Leu Ala Thr Asn Asp Val His Val Pro Arg
 275 280 285
 Phe Pro His Asp Arg Phe Arg Gly Lys Asn Pro Met Gly Leu Arg Gly
 290 295 300
 Asp Ala Ile Val Gln Phe Asp Trp Ser Val Gly Gln Ile Met Glu Thr
 305 310 315 320
 Leu Asp Lys Leu Gly Leu Ser Glu Asn Thr Leu Ile Ile Leu Ser Ser
 325 330 335
 Asp Asn Gly Pro Val Val Asp Asp Gly Tyr Gln Asp Arg Ala Glu Glu
 340 345 350
 Leu Leu Asn Gly His Ser Pro Ala Gly Pro Leu Arg Gly Asn Lys Tyr
 355 360 365
 Ser Ala Phe Glu Gly Gly Thr Arg Ile Pro Ala Ile Val Arg Trp Pro
 370 375 380
 Lys Gly Ala Ala Ser Ser Gln Val Ser Asn Ala Leu Val Ser Gln Ile
 385 390 395 400
 Asp Trp Phe Ala Ser Leu Ala Ser Leu Val Gly Ala Gly Leu Pro Lys
 405 410 415
 Gly Ala Ala Pro Asp Ser Phe Asn Tyr Leu Asp Thr Trp Leu Gly Lys
 420 425 430
 Asn Gln Ser Asp Arg Ser Trp Val Ile Glu Gln Ala Ser Asn His Thr
 435 440 445
 Leu Ser Val Arg Thr Lys Asp Trp Lys Tyr Ile Glu Pro Asn Asp Gly
 450 455 460
 Pro Ala Met Ile Thr Trp Gly Pro Lys Ile Glu Thr Gly Asn Leu Ser
 465 470 475 480
 Thr Pro Gln Leu Tyr His Val Val Asp Asp Val Ala Glu Gln Lys Asn
 485 490 495
 Val Ala Ser Leu His Pro Asp Leu Val Phe Glu Leu Gln Asn Ile Leu
 500 505 510
 Arg His Val Arg Met Lys Asn Leu Lys Pro
 515 520

<210> 6082

<211> 83

<212> PRT

<213> B.fragilis

<400> 6082

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80

Ser Ala Arg

<210> 6083

<211> 124

<212> PRT

<213> B.fragilis

<400> 6083

Ala	Ser	Ile	Asn	Asp	Val	His	His	Trp	Tyr	Arg	Gln	Tyr	Ile	Arg	Ile
1				5					10					15	
Arg	Thr	Ser	Asp	Val	Ser	Val	Lys	Arg	Asn	Ile	Glu	Ile	Val	Gly	Ser
			20					25					30		
Ser	Phe	Ser	Tyr	Gly	Lys	Arg	Asn	Thr	Gln	Asn	Ser	Val	Gly	Thr	Gln
		35					40					45			
Phe	Gly	Phe	Cys	Leu	Cys	Ser	Ile	Gln	Cys	Gln	His	Gly	Met	Ile	Asn
	50					55					60				
Ala	Tyr	Leu	Val	Glu	Gly	Arg	His	Thr	Asp	Gln	Met	Arg	Ser	Asn	Asp
65					70					75				80	
Phe	Ile	Asp	Val	Leu	Tyr	Cys	Phe	Leu	Tyr	Thr	Leu	Ala	Ala	Ile	Thr
			85						90					95	
Met	Phe	Ile	Thr	Val	Ala	Glu	Phe	Lys	Arg	Phe	Val	Phe	Thr	Gly	Arg
			100					105						110	
Cys	Thr	Arg	Trp	Asn	Gly	Cys	Thr	Ser	His	Asn	Ala				
			115				120								

<210> 6084

<211> 183

<212> PRT

<213> B.fragilis

<400> 6084

Arg	Thr	Ile	Asn	Glu	Thr	Cys	Thr	Met	Lys	Lys	Leu	Ile	Lys	Leu	Val
1				5					10					15	
Leu	Phe	Leu	Met	Val	Ala	Tyr	Pro	Leu	Thr	Gly	Ala	Ile	Leu	Ser	Ala
			20					25					30		
Cys	Ser	Glu	Ser	Asp	Cys	Ser	Met	Thr	Gly	Arg	Pro	Met	Val	Tyr	
		35				40					45				
Ala	Lys	Met	Tyr	Ile	Ile	Asn	Pro	Glu	Thr	Lys	Ala	Val	Leu	Asn	Asp
	50					55					60				
Thr	Leu	Asp	Ser	Leu	Ser	Val	Thr	Ala	Phe	Gly	Thr	Asp	Ser	Ile	Ile
65					70					75				80	
Ile	Asn	Asn	Gln	Lys	Lys	Val	His	Asp	Ile	Ala	Leu	Pro	Leu	Arg	Tyr
			85					90						95	
Thr	Ser	Asp	Ser	Thr	Ile	Leu	Val	Phe	His	Tyr	Thr	Arg	Leu	Leu	Arg
			100					105					110		
Asp	Thr	Met	Val	Ile	Leu	Gln	Thr	Asn	Thr	Pro	Tyr	Phe	Gln	Ser	Met
		115					120					125			
Asp	Cys	Gly	Tyr	Ser	Met	Lys	Gln	Asn	Ile	Ile	Ser	Ile	His	Pro	Ile
	130					135					140				
Asp	Tyr	Thr	Glu	Thr	Asn	Lys	Lys	Lys	Tyr	His	Ser	Ile	Asp	Ser	Leu
145					150					155				160	
Tyr	Ile	Lys	Ser	Asn	Ala	Ala	Asn	Ile	Asn	Gly	Thr	Glu	Asn	Leu	Lys
			165					170						175	
Ile	Phe	Tyr	Arg	Tyr	Asn	Arg									
			180												

<210> 6085

<211> 81

<212> PRT

<213> B.fragilis

<400> 6085

Ala	Thr	Asp	Lys	Lys	Ile	Asp	Asn	Ile	Ala	Ile	Asn	Pro	Lys	Ser	Ala
1				5					10					15	
Gly	Glu	Thr	Asn	Leu	Ala	Ile	Thr	Met	Val	Asn	Ile	Lys	Arg	Asn	Ala
			20					25					30		
Cys	Pro	Asp	Ile	Phe	Ser	Thr	Ala	Phe	His	Ile	Lys	Leu	Phe	Asn	Ala
		35					40					45			
Ala	Asn	Phe	Lys	Phe	Leu	Ile	Ile	Ile	Tyr	Asn	His	His	Leu	Gln	Val
	50					55					60				
Ile	Asn	Asn	Ile	Lys	Ala	Leu	Ile	Ile	Gln	Lys	Tyr	Asn	Gln	Tyr	Leu
65					70					75					80
Val															

<210> 6086

<211> 321

<212> PRT

<213> B.fragilis

<400> 6086

Phe	Ile	Ser	Lys	Met	Asp	Ile	Ser	Val	Val	Val	Pro	Leu	Phe	Asn	Glu
1				5					10					15	
Glu	Glu	Ser	Ile	Pro	Glu	Leu	Phe	Ala	Trp	Ile	Glu	Arg	Val	Met	Lys
			20					25					30		
Ala	Asn	Gly	Phe	Ser	Tyr	Glu	Val	Ile	Phe	Val	Asn	Asp	Gly	Ser	Thr
		35					40					45			
Asp	Arg	Ser	Trp	Glu	Ile	Ile	Glu	Glu	Leu	Gln	Lys	Gln	Ser	Ser	Thr
	50				55						60				
Val	Lys	Gly	Ile	Lys	Phe	Arg	Arg	Asn	Tyr	Gly	Lys	Ser	Pro	Ala	Leu
65				70					75						80
Tyr	Cys	Gly	Phe	Glu	Arg	Ala	Glu	Gly	Asn	Val	Val	Ile	Thr	Met	Asp
			85						90					95	
Ala	Asp	Leu	Gln	Asp	Ser	Pro	Asp	Glu	Ile	Pro	Glu	Leu	Tyr	Arg	Met
		100						105					110		
Ile	Thr	Glu	Asp	Gly	Tyr	Asp	Leu	Val	Ser	Gly	Tyr	Lys	Gln	Lys	Arg
		115					120						125		
Tyr	Asp	Pro	Leu	Ser	Lys	Thr	Leu	Pro	Thr	Lys	Leu	Phe	Asn	Ala	Thr
	130					135						140			
Ala	Arg	Lys	Val	Ser	Gly	Ile	His	Asn	Leu	His	Asp	Phe	Asn	Cys	Gly
145					150					155					160
Leu	Lys	Ala	Tyr	Arg	Lys	Ala	Val	Val	Lys	Asn	Ile	Glu	Val	Tyr	Gly
			165						170					175	
Glu	Met	His	Arg	Tyr	Ile	Pro	Tyr	Leu	Ala	Lys	Asn	Ala	Gly	Phe	Gln
			180					185					190		
Lys	Ile	Gly	Glu	Lys	Val	Val	His	His	Gln	Ala	Arg	Lys	Phe	Gly	Lys
	195						200						205		
Thr	Lys	Phe	Gly	Gly	Trp	Asn	Arg	Phe	Phe	Asn	Gly	Tyr	Leu	Asp	Leu
	210					215					220				
Ile	Ser	Leu	Trp	Phe	Leu	Ser	Lys	Phe	Gly	Ile	Lys	Pro	Met	His	Phe
225					230					235					240
Phe	Gly	Leu	Leu	Gly	Ser	Leu	Met	Phe	Ile	Leu	Gly	Phe	Ile	Ser	Val
			245						250					255	
Val	Ile	Val	Gly	Ala	Ser	Lys	Leu	Tyr	Ser	Met	Asn	His	Gly	Met	Pro
			260					265					270		
Tyr	Arg	Leu	Val	Thr	Asp	Ser	Pro	Tyr	Phe	Tyr	Leu	Ser	Leu	Thr	Ala
		275					280						285		

Met Ile Ile Gly Thr Gln Leu Phe Leu Ala Gly Phe Leu Gly Glu Leu
 290 295 300
 Ile Ser Arg Asn Ala Pro Glu Arg Asn Asn Tyr Gln Ile Glu Lys Ile
 305 310 315 320
 Ile

<210> 6087
 <211> 265
 <212> PRT
 <213> B.fragilis

<400> 6087
 Ser Asp Cys Lys Thr Ile Ser Ser Gly Glu Ala Glu Arg Asn Asp Arg
 1 5 10 15
 Asn Leu Phe Ile Gly Gly Arg Asn Ser Arg Ser Phe Asn Ala Thr Ile
 20 25 30
 Tyr His Ile Val Cys Ser Val Val Asn Asn Ala Ile Lys Ile Asn Trp
 35 40 45
 Ile Met Lys Lys Val Val Leu Ile Gly Ala Ser Gly Phe Val Gly Ser
 50 55 60
 Ala Ile Leu Asn Glu Ala Leu Asn Arg Gly Phe His Val Thr Ala Val
 65 70 75 80
 Val Arg His Pro Glu Lys Ile Lys Ile Glu Asn Glu Asn Leu Glu Val
 85 90 95
 Lys Arg Ala Asp Val Ser Ser Leu Asp Glu Val Cys Lys Val Cys Lys
 100 105 110
 Gly Ala Asp Ala Val Ile Ser Ala Phe Asn Pro Gly Trp Asn Asn Pro
 115 120 125
 Asp Ile Tyr Lys Glu Thr Ile Glu Val Tyr Leu Thr Ile Ile Asp Gly
 130 135 140
 Val Lys Lys Ala Gly Val Asn Arg Phe Leu Met Val Gly Gly Ala Gly
 145 150 155 160
 Ser Leu Phe Ile Ala Pro Gly Ile Arg Leu Val Asp Ser Gly Glu Val
 165 170 175
 Pro Glu Lys Ile Leu Pro Gly Val Arg Ala Leu Ser Asp Phe Tyr Leu
 180 185 190
 Asp Phe Leu Lys Lys Glu Lys Glu Val Asp Trp Val Phe Phe Ser Pro
 195 200 205
 Ala Ala Asp Met Ala Pro Gly Val Arg Thr Gly Arg Tyr Arg Leu Gly
 210 215 220
 Lys Asp Glu Met Ile Val Asp Met Val Gly Asn Ser His Ile Ser Val
 225 230 235 240
 Glu Asp Tyr Ala Ala Ala Met Ile Asp Glu Leu Glu Lys Pro Glu His
 245 250 255
 His Gln Glu Arg Phe Thr Ile Gly Tyr
 260 265

<210> 6088
 <211> 291
 <212> PRT
 <213> B.fragilis

<400> 6088
 Ser Asp Gly Lys Ile Gln Tyr Arg Thr Phe Asn Asp Asn Asn Leu Lys
 1 5 10 15
 Asn Gly Lys Val Tyr Asp Val Asp Phe Glu Ala Ala Gln Gln Thr Gln
 20 25 30
 Ala Pro Thr Gly Thr Leu Val Ala Arg Tyr Arg Pro Ile Pro Ser Leu

35	40	45
Ser Asp Pro Lys Tyr Tyr	Ser His Phe Thr Leu	Ser Lys Phe Arg Asn
50	55	60
Gly Thr Phe Gln Leu Leu	Asn Tyr Asp Glu Gly	Asp Val Asp Met Gly
65	70	75
Gly Gly Ala Thr Trp	Ser Asn Leu Leu	Lys Asn Gly Ala Arg Leu Asp
85	90	95
Thr Gly Tyr Tyr Met Met	Val Thr Gly Thr Arg	Met Ala Ser Gly Ala
100	105	110
Val Leu Ala Asn Val Thr	Phe Phe Thr Ile Glu	Glu Gly Lys Thr Thr
115	120	125
Thr Val Asp Leu Val Met	Arg Glu Ser Lys Asp	Gln Val Gln Val Ile
130	135	140
Gly Asn Phe Asn Ser Glu	Ser Thr Tyr Leu Pro	Ile Gly Thr Ser Glu
145	150	155
Pro Gln Ser Ile Leu Gln	Thr Cys Gly Arg Gly	Tyr Tyr Val Val Ala
165	170	175
Val Leu Gly Ala Gly Gln	Glu Pro Thr Asn His	Ala Leu Arg Asp Ile
180	185	190
Ala Ala Leu Ser Gly Glu	Phe Glu Lys Trp Gly	Arg Lys Met Val Leu
195	200	205
Leu Phe Pro Ser Glu Glu	Gln Tyr Lys Lys Phe	Arg Pro Ser Glu Phe
210	215	220
Pro Gly Leu Pro Ser Thr	Ile Thr Tyr Gly Ile	Asp Val Asp Gly Ala
225	230	235
Ile Gln Lys Gln Ile Ala	Glu Ser Met Lys Leu	Pro Asn Ser Thr Ile
245	250	255
Leu Pro Met Phe Ile Ile	Gly Asp Thr Phe Asn	Arg Val Val Phe Val
260	265	270
Ser Gln Gly Tyr Thr Ile	Gly Leu Gly Glu Gln	Leu Met Lys Val Ile
275	280	285
His Gly Leu		
290		

<210> 6089

<211> 238

<212> PRT

<213> B.fragilis

<400> 6089

Ile Lys Leu Asn Tyr Ser	Val Ala Glu Leu Arg	Ile Thr Asn Glu Ser
1	5	10
Tyr Met Lys Pro Thr	Ile Lys Lys Val Gln	Pro Val Lys Val Val Ala
20	25	30
Pro Phe Leu Asn Ser Gln	Ser Glu Ser Pro Val	Pro Leu Asp Ala Leu
35	40	45
Thr Asp Gln Glu Lys Val	Ser Asp Leu Tyr Phe	Leu Lys Gly Thr Val
50	55	60
His Gln Ile Ala Lys Pro	Tyr Leu Ser Ile Asn	Asn Cys Thr Phe Lys
65	70	75
Gln Gln Ile Phe Ser Glu	Cys Gln Phe Lys Ser	Ala Gln Leu Thr Asp
85	90	95
Val Arg Phe Glu Asn Cys	Asp Leu Ser Asn Val	Ser Phe Ala Gly Thr
100	105	110
Thr Phe Tyr Arg Val Glu	Phe Ile Ser Cys Lys	Leu Leu Gly Thr Gly
115	120	125
Phe Pro Glu Ala Thr Leu	Asn His Val Leu Met	Asp His Cys Tyr Gly
130	135	140
Gln Tyr Ile Asn Leu Ser	Met Val Lys Met Arg	Thr Ala Arg Phe Ser

145		150		155		160
His Cys Asn Phe	Arg Asn Gly Ser Leu	Asn Asp Ser Lys Leu	Met Pro			
	165	170	175			
Ala Ala Phe Asp Thr	Cys Glu Leu Leu	Glu Ala Asp Phe	Ser His Thr			
	180	185	190			
Ser Leu Lys Gly Ile	Asp Leu Arg Asn	Ser Arg Ile Ala	Gly Ile Gln			
	195	200	205			
Leu Asn Ile Ala Asp	Leu Lys Gly Ala	Ile Val Ser Ser	Leu Gln Ala			
	210	215	220			
Ile Asp Leu Leu Pro	Leu Leu Gly Val	Lys Ile Glu Asp	Asp			
225	230	235				

<210> 6090
 <211> 153
 <212> PRT
 <213> B.fragilis

<400> 6090	
Lys Glu Leu Lys Asp Met Lys Leu Ser Gln Gln Ser Gln Ala Ile Ile	
1	5 10 15
Glu Ser Ala Ile Gln Lys Ala Ile Asn Lys Tyr Thr Cys Gly Cys Glu	
	20 25 30
Gln Thr Ile Val Thr Asp Ile His Ile Gln Pro Asn Gln Asn Ser Gly	
	35 40 45
Glu Leu Phe Ile Tyr Asp Asp Glu Asp Glu Glu Leu Ser Ser Val Thr	
	50 55 60
Ile Asp Glu Trp Thr Thr Tyr Glu Gly Asp Asp Phe Tyr Glu Asp Ala	
65	70 75 80
Glu Arg Ile Phe Arg Thr Val Leu Cys Arg Met Lys Glu Asn Gly Ser	
	85 90 95
Phe Asp Lys Leu Thr Ile Leu Lys Pro Tyr Ser Phe Val Leu Val Asp	
	100 105 110
Glu Asp Lys Glu Thr Ile Ser Glu Leu Leu Leu Val Asp Asp Asp Thr	
	115 120 125
Leu Leu Val Asn Asp Glu Leu Lys Gly Leu Asp Lys Glu Leu Asp	
	130 135 140
Asp Phe Leu Lys Asp Leu Leu Glu Lys	
145	150

<210> 6091
 <211> 411
 <212> PRT
 <213> B.fragilis

<400> 6091	
Lys Thr Ile Asn Leu Asp Ser Met Glu Ser Ile Asp Phe Gly Thr Leu	
1	5 10 15
Phe Gln Gly Phe Gly Thr Met Ile Ala Ser Gly Trp Phe Leu Ala Ser	
	20 25 30
Ala Arg Met Phe Leu Ile Ala Leu Gly Phe Leu Leu Ile Tyr Leu Gly	
	35 40 45
Trp Lys Gly Val Leu Glu Pro Met Val Met Ile Pro Met Gly Leu Gly	
	50 55 60
Met Val Ala Ile Asn Cys Gly Thr Leu Ile Met Pro Asp Gly Thr Leu	
65	70 75 80
Gly Asn Leu Phe Leu Asp Pro Met Leu Ser Asp Thr Asp Ala Leu Met	
	85 90 95
Asn Thr Met Gln Ile Asp Phe Leu Gln Pro Val Tyr Thr Leu Thr Phe	
	100 105 110

Ser Asn Gly Leu Ile Ala Cys Phe Val Phe Met Gly Ile Gly Thr Leu
 115 120 125
 Leu Asp Val Gly Phe Leu Leu Gln Lys Pro Phe Ala Ser Ile Phe Leu
 130 135 140
 Ala Leu Cys Ala Glu Leu Gly Thr Phe Leu Thr Val Pro Ile Ala Ser
 145 150 155 160
 Gly Leu Gly Leu Ser Leu Lys Glu Ser Ala Ser Val Ala Met Val Gly
 165 170 175
 Gly Ala Asp Gly Pro Met Val Leu Phe Thr Ser Leu Ala Leu Ala Lys
 180 185 190
 His Leu Phe Val Pro Ile Thr Val Val Ala Tyr Leu Tyr Leu Gly Leu
 195 200 205
 Thr Tyr Gly Gly Tyr Pro Tyr Leu Val Lys Leu Leu Ile Pro Lys Arg
 210 215 220
 Leu Arg Ala Ile Lys Met Val Glu Lys Lys Ala Pro Lys Asn Tyr Asp
 225 230 235 240
 Ala Lys Val Lys Leu Ala Phe Ser Ala Ile Leu Cys Ala Val Leu Cys
 245 250 255
 Phe Leu Phe Pro Val Ala Ser Pro Leu Phe Phe Ser Leu Phe Leu Gly
 260 265 270
 Val Ala Val Arg Glu Ser Gly Met Lys His Ile Tyr Asp Phe Val Ser
 275 280 285
 Gly Pro Leu Leu Tyr Gly Ser Thr Phe Met Leu Gly Leu Leu Leu Gly
 290 295 300
 Val Leu Cys Asp Ala His Leu Leu Leu Asp Pro Lys Ile Leu Lys Leu
 305 310 315 320
 Leu Val Leu Gly Met Leu Ala Leu Leu Leu Ser Gly Ile Gly Gly Ile
 325 330 335
 Met Gly Gly Tyr Ile Met Tyr Phe Ile Lys Lys Gly Asn Tyr Asn Pro
 340 345 350
 Val Ile Gly Ile Ala Ala Val Ser Cys Val Pro Thr Thr Ala Lys Val
 355 360 365
 Ala Gln Lys Leu Val Ser Lys Asp Asn Pro Asn Ser Phe Ile Leu Gly
 370 375 380
 Asp Ala Leu Gly Ala Asn Ile Ser Gly Val Ile Thr Ser Ala Ile Ile
 385 390 395 400
 Thr Gly Ile Tyr Ile Thr Ile Ile Pro Tyr Leu
 405 410

<210> 6092

<211> 510

<212> PRT

<213> B.fragilis

<400> 6092

Thr Lys Gln Lys Ser Leu Met Lys Asn Phe Trp Lys Lys Tyr His Lys
 1 5 10 15
 Trp Val Gly Leu Phe Phe Ser Phe Phe Ile Leu Met Phe Cys Phe Ser
 20 25 30
 Gly Ile Val Leu Asn His Arg Thr Leu Phe Ser Lys Ala Glu Val Ser
 35 40 45
 Arg Asn Trp Met Pro Glu Ser Tyr His Tyr Lys Asn Trp Asn Asn Gly
 50 55 60
 Ile Ile Lys Gly Thr Leu Arg Leu Pro Asp Gly Lys Ile Leu Ala Tyr
 65 70 75 80
 Gly Asn Ala Gly Val Trp Lys Thr Asp Ser Cys Phe Ala Thr Phe Ala
 85 90 95
 Asp Phe Asn Arg Gly Leu Ala Lys Gly Ile Asp Asn Arg Lys Ile Ser
 100 105 110

Asn Ile Val Arg Val Ala Asn Asn Asp Ile Trp Cys Ala Gly Leu Tyr
 115 120 125
 Ser Ile Tyr Leu Leu Asp His Asp Ser Trp Lys Glu Tyr Pro Ile Ala
 130 135 140
 Gly Asn Asp Glu Arg Ile Ser Asp Ile Thr Gln Arg Gly Asp Thr Leu
 145 150 155 160
 Val Ile Leu Thr Arg Ser Tyr Leu Tyr Thr Gly Val Ser Pro Tyr Asp
 165 170 175
 Glu Phe Arg Lys Thr Glu Leu Lys Thr Pro Glu Asn Tyr Ser Pro Lys
 180 185 190
 Thr Ser Leu Phe Arg Thr Ile Trp Leu Leu His Ser Gly Glu Leu Phe
 195 200 205
 Gly Thr Pro Gly Lys Leu Ala Val Asp Phe Leu Gly Val Val Leu Ile
 210 215 220
 Val Leu Ser Ala Thr Gly Ile Ile Tyr Thr Leu Leu Pro Pro Phe Ile
 225 230 235 240
 Arg Arg Arg His Arg Lys Arg Leu Pro Val Lys Thr Gln Ala Lys Ala
 245 250 255
 Leu Lys Thr Ser Leu Asn Trp His Asn Lys Leu Gly Thr Trp Leu Ile
 260 265 270
 Gly Leu Thr Leu Leu Leu Ser Val Thr Gly Met Cys Leu Arg Pro Pro
 275 280 285
 Leu Met Ile Pro Phe Val Leu Val Asn Thr Arg Pro Val Pro Gly Ser
 290 295 300
 Thr Leu Asp Ser Asp Asn Pro Trp His Asp Lys Leu Arg Ser Ile Arg
 305 310 315 320
 Trp Asp Ala Ser Arg Asn Val Trp Leu Leu Ser Ser Ser Met Gly Phe
 325 330 335
 Tyr Arg Ile Asn Asp Leu Gln Leu Pro Pro Val Lys Leu Lys Gln Thr
 340 345 350
 Pro Pro Val Ser Pro Met Gly Val Asn Val Phe His Pro Gln Ser Pro
 355 360 365
 Asp Glu Trp Leu Ile Gly Ser Phe Ser Gly Leu Phe Val Trp Asn Pro
 370 375 380
 Ser Thr Gly Thr Val Leu Asp Tyr Tyr Thr Gly Gln Pro Pro Ala Ala
 385 390 395 400
 Val His Gly Arg Pro Leu Gly Gly Ser Leu Val Asn Gly Phe Thr Asp
 405 410 415
 Asp Leu Val Thr Arg Glu Val Ile Phe Glu Tyr Asp Asn Gly Ala Arg
 420 425 430
 Asn Lys Glu Asn Asn Leu Val Leu Pro Ala Met Pro Asp Leu Ile Lys
 435 440 445
 Gln Gln Pro Met Ser Leu Trp Asn Phe Cys Leu Glu Leu His Val Gly
 450 455 460
 Arg Cys Tyr Ser Pro Phe Leu Gly Val Phe Ser Asp Leu Phe Val Phe
 465 470 475 480
 Ile Ser Gly Leu Leu Leu Thr Leu Ile Leu Ile Ser Gly Tyr Ile Val
 485 490 495
 Tyr Lys Arg His His Lys Arg Ser Lys Lys Ile Arg Met His
 500 505 510

<210> 6093

<211> 642

<212> PRT

<213> B.fragilis

<400> 6093

Arg Tyr Arg Lys Ile Lys Val Glu Asn Ser Asn Ser Gly Lys Met Lys
 1 5 10 15

Gln Lys Glu Lys Glu Ile Lys Thr Lys Tyr Met Asn Gln Lys His Ser
 20 25 30
 Leu Pro Pro Leu Leu Lys Arg Gly Thr Gly Val Arg Pro Tyr Leu Thr
 35 40 45
 Thr Asn Cys Met Lys Thr Leu Thr Arg Phe Leu Ile Ile Pro Met Leu
 50 55 60
 Ser Val Ala Phe Phe Ser Cys Ser Glu Ser His Phe Leu Lys Asp Val
 65 70 75 80
 Ala Tyr Arg Asn Gln Val Thr Gln Asp Phe Glu Met Lys Lys Gln Gln
 85 90 95
 Leu Pro Asn Gly Glu Leu Phe Ala Val Phe Asn Glu Lys Leu Thr Ile
 100 105 110
 Pro Glu Gln Glu Ala Leu Met Phe Leu Tyr Ala Tyr Met Pro Thr Gly
 115 120 125
 Asp Val Thr Asp Tyr Thr Gly Asp Tyr Tyr Leu Glu Asn Val Arg Leu
 130 135 140
 Ser Asp Gln Ala Arg Arg Glu Met Pro Trp Gly Lys Glu Ile Pro Asp
 145 150 155 160
 Asp Val Phe Arg His Phe Val Leu Pro Ile Arg Val Asn Asn Glu Asn
 165 170 175
 Leu Asp Asp Ser Arg Arg Val Phe Tyr Asn Glu Leu Lys Asp Arg Val
 180 185 190
 Lys Asn Leu Ser Leu His Asp Ala Val Leu Glu Val Asn His Trp Cys
 195 200 205
 His Glu Lys Val Ile Tyr Thr Pro Ser Asp Ala Arg Thr Ser Ser Pro
 210 215 220
 Leu Ala Ser Val Lys Thr Ala Tyr Gly Arg Cys Gly Glu Glu Ser Thr
 225 230 235 240
 Phe Thr Val Ala Ala Leu Arg Ser Val Gly Ile Pro Ala Arg Gln Val
 245 250 255
 Tyr Thr Pro Arg Trp Ala His Thr Asp Asp Asn His Ala Trp Val Glu
 260 265 270
 Ala Trp Val Asp Gly Lys Trp Tyr Phe Phe Gly Ala Cys Glu Pro Glu
 275 280 285
 Pro Val Leu Asn Leu Gly Trp Phe Asn Ala Pro Ala Ser Arg Gly Met
 290 295 300
 Leu Met His Thr Lys Val Phe Gly Arg Tyr Thr Gly Gln Glu Glu Ile
 305 310 315 320
 Met Tyr Glu Thr Pro Asn Tyr Thr Glu Ile Asn Val Ile Asp Asn Tyr
 325 330 335
 Ala Pro Thr Ala Lys Gly Ser Val Leu Val Thr Asp Ala Glu Gly Gln
 340 345 350
 Pro Val Ala Asp Ala Thr Val Glu Phe Lys Val Tyr Asn Tyr Ala Glu
 355 360 365
 Phe Tyr Thr Val Ala Thr Lys His Thr Asp Arg Ser Gly His Ala Ser
 370 375 380
 Leu Thr Ala Gly Lys Gly Asp Met Leu Val Trp Ala Ser Lys Asp Gly
 385 390 395 400
 Arg Phe Gly Tyr Ser Lys Leu Ser Phe Gly Lys Asp Asn Glu Leu Lys
 405 410 415
 Ile Thr Leu Asp Lys Asn Ala Gly Glu Thr Tyr Ser Leu Pro Leu Asp
 420 425 430
 Ile Val Pro Ala Glu Gly Ala Asn Leu Pro Glu Val Thr Pro Glu
 435 440 445
 Gln Arg Thr Glu Asn Asp Arg Arg Met Ala Gln Glu Asp Ser Ile Arg
 450 455 460
 Asn Ala Tyr Val Ala Thr Phe Ile Thr Glu Glu Gln Ala Arg Thr Phe
 465 470 475 480
 Ala Lys Glu Asn Lys Leu Asp Glu Thr Glu Thr Val Arg Leu Leu Ile

				485				490					495
Ala	Ser	Arg	Gly	Asn	His	Gln	Thr	Leu	Thr	Asp	Phe	Leu	Ser
			500					505					510
Val	Lys	Ala	Asp	Lys	Ala	Gly	Gln	Ala	Ile	Ser	Leu	Leu	Lys
		515					520					525	Val
Ser	Ala	Lys	Asp	Leu	Arg	Asp	Val	Ser	Pro	Glu	Val	Leu	Asn
	530					535					540		Asp
Leu	Asn	Asn	Ser	Gly	Leu	Pro	Ala	Ser	Glu	Asp	Phe	Cys	Ser
545					550					555			Asn
Leu	Asn	Pro	Arg	Val	Ala	Asn	Glu	Met	Ile	Thr	Pro	Tyr	Lys
				565					570				Ala
Phe	Arg	Lys	Glu	Ile	Pro	Ala	Ser	Glu	Ala	Glu	Ala	Phe	Arg
			580					585				590	Lys
Pro	Gln	Ala	Leu	Val	Glu	Trp	Cys	Lys	Lys	Glu	Ile	Thr	Ile
	595					600						605	Asn
Glu	Leu	Asn	Ser	Gln	Arg	Ile	Pro	Met	Ser	Pro	Leu	Gly	Val
	610					615					620		Trp
Ser	Pro	Gly	Ser	Lys	Gln	Lys	Asn	Pro	Val	Pro	Phe	Leu	Cys
625					630					635			Ile
Gly	Pro												His
													640

<210> 6094
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 6094

Arg	Cys	Arg	Lys	Gly	Lys	Asn	Arg	Phe	Cys	Lys	Leu	Thr	Met	Ser	Ile
1				5					10					15	
Ile	Ile	Tyr	Leu	Leu	Ile	Thr	Met	Ala	Phe	Ser	Ala	Phe	Phe	Ser	Gly
			20					25					30		
Met	Glu	Ile	Ala	Phe	Val	Ser	Val	Asp	Lys	Leu	Arg	Phe	Glu	Met	Asp
		35					40					45			
Arg	Lys	Gly	Gly	Val	Ser	Ser	Arg	Ile	Leu	Ser	Leu	Phe	Phe	Arg	Asn
	50					55					60				
Pro	Asn	Asp	Phe	Ile	Ser	Thr	Met	Leu	Val	Gly	Asn	Asn	Ile	Ala	Leu
65					70					75					80
Val	Ile	Tyr	Gly	Ile	Leu	Met	Ala	Gln	Ile	Ile	Gly	Asp	Asn	Leu	Leu
				85					90					95	
Ala	Gly	Trp	Ile	Thr	Asn	His	Phe	Val	Met	Val	Leu	Val	Gln	Thr	Val
			100					105					110		
Ile	Ser	Thr	Leu	Ile	Ile	Leu	Val	Thr	Gly	Glu	Phe	Leu	Pro	Lys	Thr
		115					120					125			
Leu	Phe	Lys	Ile	Asn	Pro	Asn	Leu	Ala	Leu	Asn	Val	Cys	Ala	Val	Leu
	130					135					140				
Leu	Phe	Ile	Cys	Tyr	Val	Val	Leu	Tyr	Pro	Ile	Ser	Lys	Phe	Ser	Ser
145					150				155						160
Gly	Val	Ser	Tyr	Leu	Phe	Leu	Arg	Leu	Phe	Gly	Met	Lys	Val	Asn	Lys
				165					170					175	
Glu	Ala	Ser	Ala	Lys	Ala	Phe	Gly	Lys	Val	Asp	Leu	Asp	Tyr	Phe	Val
		180						185					190		
Gln	Ser	Ser	Ile	Asp	Asn	Ala	Glu	Ser	Glu	Glu	Thr	Leu	Asp	Thr	Glu
		195				200						205			
Val	Lys	Ile	Phe	Gln	Asn	Ala	Leu	Asp	Phe	Ser	Ala	Val	Lys	Ile	Arg
	210					215					220				
Asp	Cys	Ile	Val	Pro	Arg	Thr	Glu	Val	Val	Ala	Val	Ala	Leu	Asp	Thr
225					230					235					240
Ser	Leu	Glu	Glu	Leu	Lys	Gly	Arg	Phe	Val	Glu	Ser	Gly	Ile	Ser	Lys

				245				250					255				
Ile	Ile	Val	Tyr	Asp	Gly	Asn	Ile	Asp	Asn	Val	Val	Gly	Tyr	Ile	His		
			260					265					270				
Ser	Ser	Glu	Met	Phe	Arg	Ser	Pro	Lys	Asp	Trp	Arg	Asp	His	Val	Lys		
		275					280					285					
Glu	Val	Pro	Ile	Val	Pro	Glu	Thr	Met	Ala	Ala	His	Lys	Leu	Met	Lys		
	290					295					300						
Leu	Phe	Met	Gln	Gln	Lys	Lys	Thr	Ile	Ala	Val	Val	Val	Asp	Glu	Phe		
305					310					315					320		
Gly	Gly	Thr	Ser	Gly	Ile	Val	Ser	Leu	Glu	Asp	Leu	Val	Glu	Glu	Ile		
				325					330				335				
Phe	Gly	Asp	Ile	Glu	Asp	Glu	His	Asp	Asn	Thr	Ser	Tyr	Ile	Cys	Lys		
			340					345					350				
Gln	Ile	Gly	Glu	His	Glu	Tyr	Val	Leu	Ser	Ala	Arg	Leu	Glu	Ile	Glu		
		355					360					365					
Lys	Val	Asn	Glu	Thr	Phe	Asn	Leu	Glu	Leu	Pro	Glu	Ser	Asp	Asp	Tyr		
	370					375					380						
Leu	Thr	Val	Gly	Gly	Leu	Ile	Leu	Asn	Gln	Tyr	Gln	Ser	Phe	Pro	Lys		
385					390					395					400		
Leu	His	Glu	Leu	Val	Ser	Val	Gly	Lys	Tyr	Gln	Phe	Lys	Ile	Ile	Lys		
			405					410					415				
Val	Thr	Ala	Thr	Lys	Ile	Glu	Leu	Val	Arg	Leu	Lys	Val	Met	Glu			
			420					425					430				

<210> 6095

<211> 499

<212> PRT

<213> B.fragilis

<400> 6095

Lys	Lys	Arg	Lys	Lys	Val	Tyr	Phe	Gln	Leu	Ile	Cys	Ile	Phe	Glu	Leu		
1				5				10					15				
Leu	Asn	Asn	Asn	Pro	Arg	Pro	Phe	Met	Lys	Lys	Lys	Asn	Ile	Leu	Phe		
			20					25				30					
Phe	Leu	Leu	Cys	Phe	Leu	Leu	Thr	Ser	Leu	Ser	Ala	Gln	Thr	Leu	Glu		
		35					40					45					
Gln	Ala	Arg	Gly	Met	Tyr	Gly	Arg	Gly	Gln	Tyr	Ala	Glu	Ala	Lys	Pro		
	50					55					60						
Val	Phe	Gln	Lys	Tyr	Val	Lys	Ser	Gln	Pro	Ala	Asn	Gly	Asn	Tyr	Asn		
65					70					75					80		
Leu	Trp	Tyr	Gly	Val	Cys	Cys	Leu	Lys	Thr	Gly	Asn	Ala	Ala	Glu	Ala		
				85					90					95			
Leu	Lys	Tyr	Leu	Glu	Thr	Ala	Val	Lys	Lys	Arg	Ile	Pro	Ser	Gly	Gln		
			100					105					110				
Leu	Tyr	Leu	Ala	Gln	Thr	Tyr	Asn	Asp	Leu	Tyr	Arg	Phe	Gln	Asp	Ala		
		115					120					125					
Val	Asp	Cys	Tyr	Glu	Glu	Tyr	Ile	Ala	Asp	Leu	Ser	Lys	Arg	Lys	Lys		
	130					135					140						
Pro	Thr	Glu	Glu	Ala	Glu	Gln	Leu	Leu	Glu	Lys	Ala	Lys	Gly	Asn	Leu		
145					150					155					160		
Arg	Met	Leu	Lys	Gly	Val	Glu	Asp	Val	Cys	Val	Ile	Asp	Ser	Phe	Val		
			165					170						175			
Ile	Asp	Lys	Ala	Asn	Phe	Leu	Lys	Ala	Tyr	Lys	Ile	Ser	Glu	Glu	Ser		
			180					185						190			
Gly	Lys	Leu	Phe	Thr	Tyr	Asn	Asp	Tyr	Phe	Lys	Thr	Lys	Gly	Tyr	His		
		195					200					205					
Pro	Gly	Thr	Val	Tyr	Glu	Thr	Glu	Ile	Gly	Asn	Arg	Ile	Tyr	Tyr	Ser		
	210					215					220						
Glu	Gln	Gly	Glu	Glu	Ser	Leu	Asn	Ile	Leu	Ser	Lys	Thr	Lys	Met	Leu		

225 230 235 240
 Asp Glu Trp Ser Gln Gly Lys Pro Leu Pro Gly Ser Ile Asn Ala Ser
 245 250 255
 Gly Asn Ala Asn Tyr Pro Tyr Val Leu Ser Asp Gly Val Thr Ile Tyr
 260 265 270
 Tyr Ala Ser Asp Gly Asp Gly Ser Met Gly Gly Tyr Asp Ile Phe Val
 275 280 285
 Thr Arg Tyr Asn Thr Asn Thr Asp Thr Tyr Leu Val Pro Glu Asn Val
 290 295 300
 Gly Met Pro Phe Asn Ser Pro Tyr Asn Asp Tyr Met Tyr Val Ile Asp
 305 310 315 320
 Glu Tyr Asn Asn Leu Gly Trp Phe Ala Ser Asp Arg Tyr Gln Pro Glu
 325 330 335
 Asp Lys Val Cys Ile Tyr Val Phe Val Pro Asn Asp Ser Lys Arg Thr
 340 345 350
 Tyr Asn Tyr Glu Ala Met Glu Pro Glu Lys Met Ile Glu Leu Ala Gln
 355 360 365
 Leu His Ser Leu Glu Ser Thr Trp Lys Asp Ser Lys Ile Val Asp Asp
 370 375 380
 Ala Arg Gln Arg Leu Glu Ala Val Ile Asn His Lys Pro Ala Val Glu
 385 390 395 400
 Gln Asn Phe Asp Phe Glu Phe Ile Ile Asp Asp His Ser Thr Tyr His
 405 410 415
 His Leu Thr Asp Phe Lys Ser Pro Lys Ala Lys Gln Leu Tyr Leu Lys
 420 425 430
 Tyr Glu Gln Met Glu Lys Asp Tyr Arg Gln Gln Thr Asp Lys Leu Lys
 435 440 445
 Ser Gln Arg Glu Gly Phe Ala Arg Ser Asn Lys Asp Glu Gln Ser Lys
 450 455 460
 Met Ala Pro Ala Ile Arg Asp Leu Glu Lys Arg Val Leu Gln Met Ser
 465 470 475 480
 Glu Glu Leu Asp Lys Gln Ala Ile Glu Val Arg Asn Ala Glu Lys Gln
 485 490 495
 Asn Leu Lys

<210> 6096

<211> 183

<212> PRT

<213> B.fragilis

<400> 6096

Ser Leu Leu Lys Leu Phe Leu Thr Asn Val Val Leu Glu Thr Thr Asp
 1 5 10 15
 Ser Asp Lys His Trp Tyr Val Val Leu Thr Arg Thr Asn Ser Glu Arg
 20 25 30
 Lys Val Arg Asp Tyr Phe Gln Leu Gln Glu Val Asp Thr Phe Leu Pro
 35 40 45
 Val Gln Asn Arg Val Ile Glu Arg Glu Gly Lys Arg Ile Glu Arg Glu
 50 55 60
 Arg Leu Leu Leu Pro Arg Met Val Phe Val His Ile Ser Arg Gln Glu
 65 70 75 80
 Met Ala Ala Val Arg Ser Thr Leu Asn Val Tyr Asp Phe Leu Arg Asp
 85 90 95
 Arg Ser Thr Gly Ala Pro Thr Cys Ile Pro Asp Ala Gln Met Ala Asp
 100 105 110
 Phe Arg Tyr Met Leu Asp Tyr Ser Gln Asp Gln Val Ile Leu Thr Gly
 115 120 125
 Glu Ser Ile Pro Lys Gly Thr Arg Val Val Val Ala Lys Gly Asp Leu

130 135 140
 Gln Gly Leu Arg Gly Glu Leu Val Arg Tyr Asn Asn Lys Tyr His Ile
 145 150 155 160
 Leu Val Arg Ile Asp Met Phe Gly Ser Ala Met Val Thr Ile Pro Ala
 165 170 175
 Ser Tyr Val Arg Lys Glu Lys
 180

<210> 6097
 <211> 498
 <212> PRT
 <213> B.fragilis

<400> 6097

Asp Thr Met Lys Ala Asn Asp Leu Leu Ser Gln Phe Gly Asp His Arg
 1 5 10 15
 Gln Arg Val Gln Ser Ala Ile Thr Ser Val Cys Glu Gly Arg Gly Ile
 20 25 30
 Leu Leu Val Asp Asp Glu Asn Arg Glu Asn Glu Gly Asp Leu Ile Phe
 35 40 45
 Ser Ala Gln Ser Met Thr Glu Thr Asp Met Ala Ile Met Ile Arg His
 50 55 60
 Cys Ser Gly Ile Val Cys Leu Cys Ile Thr Glu Glu Lys Ala Arg Gln
 65 70 75 80
 Leu Asn Leu Pro Leu Met Val Glu Gln Asn Thr Ser Lys Tyr Gly Thr
 85 90 95
 Ala Phe Thr Ile Ser Ile Glu Ala Ala Glu Gly Val Thr Thr Gly Val
 100 105 110
 Ser Ala Ala Asp Arg Ile Gln Thr Ile Arg Thr Ala Ile Ala Pro Asn
 115 120 125
 Ala Thr Pro Glu Ser Leu His His Pro Gly His Ile Phe Pro Leu Ile
 130 135 140
 Ala Arg Ser Gly Gly Ile Lys Glu Arg Ser Gly His Thr Glu Gly Ser
 145 150 155 160
 Ile Asp Leu Met Lys Leu Ala Gly Leu Ala Pro Cys Ala Val Leu Cys
 165 170 175
 Glu Leu Thr Asn Asp Asp Gly Thr Met Ala Arg Leu Pro Glu Ile Ile
 180 185 190
 Glu Phe Gly Leu Glu His Lys Tyr Pro Val Val Thr Ile Asn Asp Leu
 195 200 205
 Lys Glu Tyr Gln Thr Ala Pro Asp Phe Leu Pro Lys Leu Val Gly Ser
 210 215 220
 Phe Ser Cys Pro Ala Ala Glu Asn Pro Thr Thr Ala Ile Met Glu Ala
 225 230 235 240
 Ala Phe Arg His His Tyr Met His Tyr Arg Tyr Ile Asn Cys Glu Val
 245 250 255
 Gly Pro Glu Asn Leu Ala Ala Ala Ile Gln Gly Ala Lys Ala Met Gly
 260 265 270
 Trp Arg Gly Phe Asn Cys Ser Leu Pro Asn Lys Val Glu Ile Ile Arg
 275 280 285
 Tyr Leu Asp Glu Leu Gly Glu Ser Ala Lys Ile Ile Gly Ala Val Asn
 290 295 300
 Thr Val Val Ile Gly Asp Gln Arg Ala Thr Gly Glu Asn Thr Asp
 305 310 315 320
 Gly Lys Gly Phe Val Lys Ala Ile Ser Glu Ile Ile Thr Ile Gln Asp
 325 330 335
 Lys Lys Ile Ala Leu Leu Gly Ala Gly Gly Ala Ala Arg Ala Ile Ala
 340 345 350
 Val Glu Met Ala Leu Ala Gly Val Lys Glu Ile Thr Ile Leu Asn Arg

355	360	365
Asn Arg Asp Lys Gly Gln Ala	Leu Ala Asp Leu Leu	Asn Ser Gln Thr
370	375	380
Val Ala Thr Ala Arg Phe Val	Leu Trp Asp His Pro	Tyr Arg Phe Ser
385	390	395
Thr Asp Ile Asp Ile Val Ile	Asn Ala Thr Ser Val	Gly Leu Tyr Pro
405	410	415
Asn Val Asp Gln Arg Leu Asp	Ile Asp Thr Asp Thr	Leu Leu Pro His
420	425	430
Met Val Val Ala Asp Cys Ile	Pro Asn Pro Val Tyr Thr	Gln Leu Leu
435	440	445
Arg Asp Ala Val Arg Arg Gly	Cys Cys His Val Leu Pro	Gly Met Lys
450	455	460
Met Leu Val Tyr Gln Ala Val	Ile Ala Ile Lys Tyr Trp	Ser Gly Val
465	470	475
Asp Val Asp Pro Asp Ile Met	Leu Glu Lys Leu Lys Glu	Val Val Lys
485	490	495
Pro Ala		

<210> 6098
 <211> 108
 <212> PRT
 <213> B.fragilis

<400> 6098
Cys Lys Met Lys Ser Leu Lys Tyr Ile Val Ala Leu Ala Leu Ala Ala
1 5 10 15
Gly Leu Phe Gln Ala Cys Asp Leu Glu Arg Tyr Pro Leu Thr Asp Leu
20 25 30
Ser Glu Glu Thr Phe Trp Asn Ser Glu Ser Asn Ala Glu Leu Ala Leu
35 40 45
Thr Ser Leu Tyr Arg Gly Ser Leu Thr Asp Gly Val Glu Tyr Asn Pro
50 55 60
Ser Asp Trp Trp Ser Tyr His Gly Met Ile Met Met Glu His Leu Ser
65 70 75 80
Asp Asn Ala Phe Asp Arg Arg Gly Glu Asn Asn Pro Phe Phe Lys Ile
85 90 95
Ser Ser Gly Asn Pro Asp Cys Arg Gln Cys Phe Tyr
100 105

<210> 6099
 <211> 306
 <212> PRT
 <213> B.fragilis

<400> 6099
Phe Val Val Asn Ile Phe Ile Lys Leu Lys Pro Phe Asn Asn Met Lys
1 5 10 15
Lys Tyr Phe Pro Ser Ser Glu Leu Ile Ile Asn Glu Asp Gly Ser Val
20 25 30
Phe His Leu His Val Lys Pro Glu Trp Leu Ala Asp Lys Val Ile Leu
35 40 45
Val Gly Asp Pro Gly Arg Val Ala Leu Val Ala Ser His Phe Glu Asn
50 55 60
Lys Glu Cys Glu Val Glu Ser Arg Glu Phe Lys Thr Val Thr Gly Thr
65 70 75 80
Tyr Lys Gly Lys Arg Ile Thr Val Val Ser Thr Gly Ile Gly Cys Asp
85 90 95

Asn Ile Asp Ile Val Val Asn Glu Leu Asp Ala Leu Ala Asn Ile Asp
 100 105 110
 Phe Gln Thr Arg Glu Glu Lys Glu His Leu Arg Ser Leu Glu Leu Val
 115 120 125
 Arg Ile Gly Thr Cys Gly Gly Leu Gln Pro Asn Thr Pro Val Gly Thr
 130 135 140
 Phe Val Cys Ser Glu Lys Ser Ile Gly Phe Asp Gly Leu Leu Asn Phe
 145 150 155 160
 Tyr Ala Gly Arg Asn Ala Val Cys Asp Leu Pro Phe Glu Arg Ala Phe
 165 170 175
 Leu Asn His Met Gly Trp Ser Gly Asn Met Cys Ala Pro Ala Pro Tyr
 180 185 190
 Val Ile Asp Ala Asn Ala Glu Leu Ile Asp Arg Ile Ala Gln Glu Asp
 195 200 205
 Met Val Arg Gly Val Thr Ile Ala Ala Gly Gly Phe Phe Gly Pro Gln
 210 215 220
 Gly Arg Glu Leu Arg Val Pro Leu Ala Asp Pro Lys Gln Asn Asp Lys
 225 230 235 240
 Ile Glu Lys Phe Glu Tyr Lys Gly Tyr Lys Ile Thr Asn Phe Glu Met
 245 250 255
 Glu Ser Ser Ala Leu Ala Gly Leu Ser Lys Leu Met Gly His Lys Ala
 260 265 270
 Met Thr Val Cys Met Val Ile Ala Asn Arg Leu Ile Lys Glu Ala Asn
 275 280 285
 Thr Gly Tyr Lys Asn Thr Ile Asp Thr Leu Ile Lys Thr Val Leu Asp
 290 295 300
 Arg Ile
 305

<210> 6100
 <211> 386
 <212> PRT
 <213> B.fragilis

<400> 6100
 Asp Lys Lys Lys Met Asn Ile Val Phe Val Gly Leu Ser Gly Val Pro
 1 5 10 15
 Tyr Ala Arg Arg Ala Ile Asp Thr Arg Leu Leu Ser Phe Ala Asn Leu
 20 25 30
 Phe Thr Ser Ser Asn His Asp Val Val Ile Leu Asn Arg Tyr Ser Ala
 35 40 45
 Leu Lys Pro Asn Trp Glu Tyr Asp Ala Gln Phe Ile Asp Asp Arg Val
 50 55 60
 Ser Val Ile Glu Leu Cys Asn Leu Lys Gly Ile Pro Lys Cys Met Ser
 65 70 75 80
 Lys Phe Leu Leu Ile Tyr Thr Ile Ile Ile Glu Phe Trp Lys Leu Ile
 85 90 95
 Phe Leu Asn Lys Lys Lys Lys Ile Asp Val Leu His Val Ala Ser Gly
 100 105 110
 His Phe Ile Asp Ile Phe Tyr Tyr Val Ile Ile Ala Arg Cys Ile Gly
 115 120 125
 Ala Lys Val Val Tyr His Tyr Cys Glu Tyr Arg Ser Phe Lys Ser
 130 135 140
 Arg Asn Val Tyr His Arg Ile Asn Gly Lys Leu Ile Asn Cys Tyr Ala
 145 150 155 160
 Pro Lys Phe Trp Asp Gly Ala Ile Cys Ile Ser His Phe Leu Val Ser
 165 170 175
 Lys Thr Lys Glu Val Asn Lys Phe Ile Lys Ile Ile Gln Ile Pro Pro
 180 185 190

Ile Cys Asp Tyr Asp Tyr Phe Asp His Ile Ile Cys Glu Lys Glu Ala
 195 200 205
 Ser Pro Tyr Leu Leu Phe Cys Gly Tyr Thr Ser Tyr Ser Glu Ile Ile
 210 215 220
 Tyr Met Ile Ile Asp Ala Tyr Asn Lys Ser Arg Ile Lys Glu Val Ala
 225 230 235 240
 Ser Leu Lys Met Val Ile Asn Gly Asn Pro Val Val Ile Ser Glu Ile
 245 250 255
 Arg Arg Tyr Cys Pro Lys Met Glu Ile Leu Gln Asn Leu Lys Tyr Thr
 260 265 270
 Asp Leu Ile Ser Met Phe Lys Gly Ala Leu Ala Leu Phe Ile Pro Leu
 275 280 285
 Arg Asn Thr Ile Gln Asp Ile Ala Arg Phe Pro Asn Lys Ile Cys Glu
 290 295 300
 Tyr Thr Ala Cys His Gly Val Val Val Thr Thr Arg Tyr Gly Glu Ile
 305 310 315 320
 Pro Tyr Tyr Phe Glu Asp Lys Ile Asn Ala Leu Ile Ala Asp Asp Phe
 325 330 335
 Asn Val Ala Ser Ile Ala Glu Gln Leu Asp Trp Leu Tyr Asp Asn Met
 340 345 350
 Asp Gln Thr Ala Arg Ile Lys Lys Asn Ser Tyr Leu Leu Gly Arg Arg
 355 360 365
 Val Phe Asn Leu Ile Ser Tyr Lys Asp Ser Val Thr Glu Phe Leu Lys
 370 375 380
 Glu Leu
 385

<210> 6101
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 6101
 Lys Ala Asn Glu Ser Ala Ala Glu Ala Ile Asn Phe Ile Thr Pro Ala
 1 5 10 15
 Thr Lys Lys Pro Met Thr Lys Val Ser Pro Ile Met Ala Lys Val Asp
 20 25 30
 Asn Asn Lys Leu Asn Ile Thr Gln Tyr Asp Phe Arg Leu Lys Asn Lys
 35 40 45
 Met Gln Cys Ile Pro Thr Ala Gly Lys Tyr Lys Thr His Leu Pro Gly
 50 55 60
 Ile Tyr Arg Asn Gly
 65

<210> 6102
 <211> 300
 <212> PRT
 <213> B.fragilis

<400> 6102
 Ile Met Ile Glu Gln Pro Ser Pro Lys Val Tyr Asp Glu Leu Leu Ser
 1 5 10 15
 Ile Trp Glu Glu Ala Val Arg Ser Thr His His Phe Leu Thr Glu Ala
 20 25 30
 Asp Ile Gln Phe Tyr Lys Pro Leu Ile Arg His Glu Tyr Leu Ala Ala
 35 40 45
 Val Arg Leu Tyr Ile Ile Arg Glu Asp Ser Gly Thr Ile Ala Ala Phe
 50 55 60
 Met Gly Leu Ser Asn Asp Cys Ile Glu Met Leu Phe Val Arg Pro Asn

65		70		75		80
Ala His Gly His Gly Tyr Gly Ser Arg Leu Val Glu Phe Ala Ile Arg						
	85		90			95
Lys Lys Arg Ile Tyr Lys Val Asp Val Asn Glu Gln Asn Ala Ala Ala						
	100		105			110
Leu Gly Phe Tyr Leu His Met Gly Phe Glu Thr Thr Gly Arg Asp Ala						
	115		120			125
Leu Asp Ala Thr Gly Lys Ser Phe Pro Ile Leu His Leu Gln Ile Pro						
	130		135			140
Pro Ile Arg Leu Arg Lys Ala Thr Leu Glu Asp Ile Asp Leu Leu Arg						
	145		150			155
Thr Leu Phe Thr Gln Ser Val Gln Asn Thr Cys Ser Ala Asp Tyr Asn						
	165		170			175
Arg Leu Gln Ile Gln Ala Trp Thr Gly Arg Gly Thr Leu Gln Arg Trp						
	180		185			190
His Glu Leu Phe Gln Ser Asp Leu Tyr Phe Leu Leu Ala Glu Asp Ser						
	195		200			205
Arg Lys Ser Gln Val Ala Gly Phe Thr Ser Val Asn Ser Lys Gly Tyr						
	210		215			220
Leu His Ser Met Phe Val His Pro Asp Tyr Gln Arg Gln Gly Ile Ala						
	225		230			235
Ser Arg Leu Leu Leu Lys Ala Glu Glu Tyr Val Arg Ile Arg Gln Gly						
	245		250			255
Val Ser Val Tyr Ser Glu Val Ser Ile Thr Ala Arg Pro Phe Phe Glu						
	260		265			270
Lys His Gly Tyr Ser Ile Glu Lys Glu Gln Thr Val Ser Val Gly Asp						
	275		280			285
Ile Glu Met Thr Asn Phe Leu Met Tyr Lys Arg Ile						
	290		295			300

<210> 6103

<211> 63

<212> PRT

<213> B.fragilis

<400> 6103

Glu Trp Ser Glu Cys Glu Arg Ser Phe Met Arg Leu Phe Asn Arg Ile						
1	5		10			15
Gln Ala Ser Ile His Asp Ile Tyr Trp Glu Asn Gln Cys Thr Asp His						
	20		25			30
Leu Met Thr Asp Glu Leu Arg Arg Glu Glu Gly Glu Pro Leu Leu Leu						
	35		40			45
Ser Val Ala Asp Val Met Glu Ile Leu Val Arg Lys Ile Leu Lys						
	50		55			60

<210> 6104

<211> 434

<212> PRT

<213> B.fragilis

<400> 6104

Lys Thr Arg Glu Thr Met Lys Ile Glu Lys Ile Thr Gly Arg Glu Ile						
1	5		10			15
Leu Asp Ser Arg Gly Asn Pro Thr Val Glu Val Asp Val Val Leu Glu						
	20		25			30
Ser Gly Ile Met Gly Arg Ala Ser Val Pro Ser Gly Ala Ser Thr Gly						
	35		40			45
Glu His Glu Ala Leu Glu Leu Arg Asp Gly Asp Lys His Arg Tyr Gly						
	50		55			60

Gly Lys Gly Val Gln Lys Ala Val Glu Asn Val Asn Lys Val Ile Ala
 65 70 75 80
 Pro His Leu Ile Gly Met Ser Ala Leu Asp Gln Ile Gly Ile Asp His
 85 90 95
 Ala Met Leu Ala Leu Asp Gly Thr Lys Thr Lys Ala Lys Leu Gly Ala
 100 105 110
 Asn Ala Ile Leu Gly Val Ser Leu Ala Val Ala Lys Ala Ala Ala Asn
 115 120 125
 Tyr Leu Asp Ile Pro Leu Tyr Arg Tyr Ile Gly Gly Thr Asn Thr Tyr
 130 135 140
 Val Leu Pro Val Pro Met Met Asn Ile Ile Asn Gly Gly Ser His Ser
 145 150 155 160
 Asp Ala Pro Ile Ala Phe Gln Glu Phe Met Ile Arg Pro Val Gly Ala
 165 170 175
 Ser Ser Phe Lys Glu Gly Leu Arg Met Gly Ala Glu Val Phe His Ala
 180 185 190
 Leu Lys Lys Val Leu Lys Asp Arg Gly Leu Ser Thr Ala Val Gly Asp
 195 200 205
 Glu Gly Gly Phe Ala Pro Asn Leu Glu Gly Thr Glu Asp Ala Leu Asn
 210 215 220
 Ser Ile Leu Ala Ala Ile Lys Ala Ala Gly Tyr Glu Pro Gly Lys Asp
 225 230 235 240
 Val Met Ile Gly Met Asp Cys Ala Ser Ser Glu Phe Tyr His Asp Gly
 245 250 255
 Ile Tyr Asp Tyr Thr Lys Phe Glu Gly Glu Lys Gly Lys Lys Arg Thr
 260 265 270
 Ala Asp Glu Gln Ile Asp Tyr Leu Glu Lys Leu Ile Asn Glu Tyr Pro
 275 280 285
 Ile Asp Ser Ile Glu Asp Gly Met Ser Glu Asn Asp Trp Glu Gly Trp
 290 295 300
 Lys Lys Leu Thr Gln Arg Ile Gly Asp Arg Cys Gln Leu Val Gly Asp
 305 310 315 320
 Asp Leu Phe Val Thr Asn Val Asp Phe Leu Ala Lys Gly Ile Glu Lys
 325 330 335
 Gly Cys Ala Asn Ser Ile Leu Ile Lys Val Asn Gln Ile Gly Ser Leu
 340 345 350
 Thr Glu Thr Leu Asn Ala Ile Glu Met Ala His Arg His Gly Tyr Thr
 355 360 365
 Thr Val Thr Ser His Arg Ser Gly Glu Thr Glu Asp Ala Thr Ile Ala
 370 375 380
 Asp Ile Ala Val Ala Thr Asn Ser Gly Gln Ile Lys Thr Gly Ser Leu
 385 390 395 400
 Ser Arg Ser Asp Arg Met Ala Lys Tyr Asn Gln Leu Leu Arg Ile Glu
 405 410 415
 Glu Glu Leu Gly Asp Arg Ala Val Tyr Gly Tyr Lys Arg Ile Val Val
 420 425 430
 Lys Gly

<210> 6105

<211> 180

<212> PRT

<213> B.fragilis

<400> 6105

Pro Val Met Asp Thr Ile Gln Ile Lys Asp Lys Leu Phe Thr Val Ser
 1 5 10 15
 Ile Arg Glu Gln Glu Ile Gln Lys Glu Val Ile Arg Val Ala Asn Glu
 20 25 30

Ile Asn Arg Asp Leu Ala Gly Lys Asn Pro Leu Phe Leu Ser Val Leu
 35 40 45
 Asn Gly Ser Phe Met Phe Thr Ala Asp Leu Leu Lys His Ile Thr Ile
 50 55 60
 Pro Cys Glu Ile Ser Phe Val Lys Leu Ala Ser Tyr Gln Gly Val Ser
 65 70 75 80
 Ser Thr Gly Ser Ile Lys Glu Val Ile Gly Ile Asn Glu Asp Ile Ala
 85 90 95
 Gly Arg Thr Ile Val Ile Val Glu Asp Ile Val Asp Thr Gly Leu Thr
 100 105 110
 Met Gln Arg Leu Leu Glu Thr Leu Gly Thr Arg Gly Pro Lys Glu Ile
 115 120 125
 His Ile Ala Ser Leu Leu Val Lys Pro Asp Lys Leu Lys Val Asp Leu
 130 135 140
 Asn Ile Glu Tyr Val Ala Met Asn Ile Pro Asn Asp Phe Ile Val Gly
 145 150 155 160
 Tyr Gly Leu Asp Tyr Asp Gly Phe Gly Arg Asn Tyr Pro Asp Ile Tyr
 165 170 175
 Thr Val Val Asp
 180

<210> 6106
 <211> 158
 <212> PRT
 <213> B.fragilis

<400> 6106
 Gln Thr Met Asp Val Leu Ile Ile Ile Ala Leu Ile Ala Ala Ala Val
 1 5 10 15
 Ile Leu Phe Leu Val Glu Leu Phe Val Ile Pro Gly Ile Ser Leu Ala
 20 25 30
 Gly Ile Ser Ala Leu Val Cys Ile Ile Tyr Ala Asn Tyr Tyr Ala Phe
 35 40 45
 Ala Asn Leu Gly Thr Gly Ala Gly Phe Ile Thr Leu Ile Ile Ser Gly
 50 55 60
 Ile Ala Cys Ile Gly Ser Leu Val Trp Phe Met Arg Ser Lys Thr Leu
 65 70 75 80
 Asp Lys Leu Ala Leu Lys Lys Asp Ile Thr Ser Lys Ile Asp Arg Ser
 85 90 95
 Ala Ala Glu Lys Val Lys Val Gly Asp Thr Gly Ile Thr Ile Thr Arg
 100 105 110
 Leu Ala Gln Ile Gly Asn Ala Glu Ile Asn Gly Asn Ile Ile Glu Val
 115 120 125
 Lys Ser Met Asp Gly Leu Leu Asn Glu Lys Thr Pro Ile Val Val Asn
 130 135 140
 Arg Ile Thr Asp Gly Ile Ile Phe Val Glu Lys Leu Lys Ser
 145 150 155

<210> 6107
 <211> 175
 <212> PRT
 <213> B.fragilis

<400> 6107
 Lys Asn Met Asp Trp Asn Lys Lys Ile Met Arg Ile Ser Leu Leu Val
 1 5 10 15
 Phe Thr Leu Val Val Gly Ile Ser Cys Thr Val Ser Tyr Lys Phe Asn
 20 25 30
 Gly Gly Asn Ile Asn Tyr Asp Lys Val Lys Thr Ile Ser Ile Ala Asp

35 40 45
 Phe Pro Ile Lys Ser Asp Tyr Val Tyr Ala Pro Leu Gly Thr Lys Phe
 50 55 60
 Asn Glu Asp Leu Lys Asp Ile Phe Leu Arg Gln Thr Arg Leu Lys Leu
 65 70 75 80
 Val Asn Asn Asn Ala Asp Leu Glu Ile Asp Gly Glu Ile Thr Gly Tyr
 85 90 95
 Asn Gln Tyr Asn Gln Ala Val Ser Ala Asp Gly Tyr Ser Ser Glu Thr
 100 105 110
 Lys Leu Thr Ile Thr Val Asn Val Arg Phe Val Asn Asn Thr Asn His
 115 120 125
 Glu Gln Asp Phe Glu Gln Gln Phe Ser Ala Phe Arg Val Tyr Asp Ser
 130 135 140
 Arg Glu Leu Leu Thr Ala Val Gln Asp Gly Leu Ile Ala Glu Met Thr
 145 150 155 160
 Lys Glu Ile Thr Asp Gln Ile Phe Asn Ala Thr Val Ala Asn Trp
 165 170 175

<210> 6108

<211> 355

<212> PRT

<213> B.fragilis

<400> 6108

Asn Lys Pro Glu Met Lys Lys Leu Ile Ile Leu Thr Gly Leu Leu Leu
 1 5 10 15
 Ser Thr Ser Ala Tyr Ala Gln Thr Glu Val Thr Ala Gly Val Thr Arg
 20 25 30
 Gly Lys Asp Tyr Gly Val Thr Tyr Ala Leu Pro Lys Thr Ala Ile Asn
 35 40 45
 Ile Glu Val Lys Val Asn Lys Val Thr Tyr Thr Pro Gly Glu Phe Ser
 50 55 60
 Lys Tyr Ala Asp Arg Tyr Leu Arg Leu Thr Asp Val Ser Gly Glu Pro
 65 70 75 80
 Gln Glu Tyr Trp Glu Leu Val Ser Val Lys Ala Lys Ser Val Gly Ile
 85 90 95
 Pro Asp Ser Glu His Thr Tyr Phe Val Lys Leu Lys Asp Lys Thr Val
 100 105 110
 Ala Pro Leu Ile Glu Leu Thr Glu Asp Gly Ile Val Lys Ser Ile Asn
 115 120 125
 Val Pro Leu Ser Pro Lys Lys Ser Ala Pro Met Gln Pro Ala Thr Thr
 130 135 140
 Gln Lys Lys Lys Ile Asn Pro Arg Asp Phe Leu Thr Glu Glu Ile Leu
 145 150 155 160
 Met Ala Gly Ser Thr Ala Lys Met Ala Glu Leu Val Ala Lys Glu Ile
 165 170 175
 Tyr Asn Ile Arg Glu Ser Lys Asn Ala Leu Val Arg Gly Gln Ala Asp
 180 185 190
 Asn Met Pro Lys Asp Gly Glu Gln Leu Lys Ile Met Leu Ala Asn Leu
 195 200 205
 Glu Glu Gln Glu Ala Ala Met Thr Glu Met Phe Ser Gly Thr Leu Asn
 210 215 220
 Lys Asp Glu Lys Ile Phe Asn Ile Arg Leu Thr Pro Asp Lys Glu Met
 225 230 235 240
 Asp Asn Glu Val Ala Phe Arg Phe Ser Lys Lys Leu Gly Ile Val Ala
 245 250 255
 Asn Asn Asp Leu Ala Gly Glu Pro Val Tyr Ile Thr Leu Lys Asn Leu
 260 265 270
 Lys Thr Val Asn Val Pro Glu Asp Asp Gly Lys Lys Lys Val Asp Gly

275 280 285
 Ile Ala Tyr Asn Val Pro Gly Lys Ala Gln Val Thr Leu Thr Glu Gly
 290 295 300
 Lys Lys Gln Trp Phe Asn Gly Glu Leu Pro Val Thr Gln Phe Gly Thr
 305 310 315 320
 Ile Glu Tyr Leu Ala Pro Ala Leu Phe Asn Lys Lys Ser Thr Val Gln
 325 330 335
 Val Thr Phe Asn Pro Asp Thr Gly Gly Leu Ile Lys Val Asp Arg Glu
 340 345 350
 Glu Gly Glu
 355

<210> 6109
 <211> 1017
 <212> PRT
 <213> B.fragilis

<400> 6109

Thr Glu Lys Glu Asp Thr Glu Met Lys Leu Lys Phe Lys His Gln Lys
 1 5 10 15
 Phe Gln Glu Asp Ala Ala Lys Ala Val Cys Asp Val Phe Gly Gly Gln
 20 25 30
 Pro Tyr Lys Thr Phe Asp Tyr Gln Val Glu Thr Arg Lys Lys Asp Gly
 35 40 45
 Gln Thr Ser Phe Glu Lys Phe Thr Gly Phe Arg Asn His Pro Ile Val
 50 55 60
 Pro Gln Leu Thr Asp Glu Ile Val Leu Lys His Ile Arg Asp Ile Gln
 65 70 75 80
 Arg Ala Gln Gln Ile Lys Pro Ser Glu Ala Leu Glu Gly Lys Tyr Asn
 85 90 95
 Leu Thr Ile Glu Met Glu Thr Gly Val Gly Lys Thr Tyr Thr Tyr Ile
 100 105 110
 Lys Thr Ile Phe Glu Leu Asn Lys Arg Tyr Gly Trp Cys Lys Phe Ile
 115 120 125
 Ile Val Val Pro Ser Val Ala Ile Arg Glu Gly Val His Lys Ser Leu
 130 135 140
 Glu Ile Met Lys Glu His Phe Ala Ser Asp Tyr Ser Thr Pro Leu Ser
 145 150 155 160
 Tyr Phe Ile Tyr Asp Ser Lys Gln Leu Gly Glu Leu Asn Ala Phe Val
 165 170 175
 Thr Asp Ser Lys Ile His Val Met Ile Ile Asn Ser Gln Lys Phe Asn
 180 185 190
 Ala Thr Asn Lys Asp Ala Arg Arg Ile Tyr Met Lys Leu Asp Asp Phe
 195 200 205
 Gly Gly Asn Cys Pro Ile Asp Val Ile Ala Gln Met Asn Pro Ile Leu
 210 215 220
 Ile Ile Asp Glu Pro Gln Ser Val Glu Gly Ala Lys Thr Lys Glu Gly
 225 230 235 240
 Leu Lys Arg Phe Asn Pro Leu Phe Thr Leu Arg Tyr Ser Ala Thr His
 245 250 255
 Arg Glu Leu Tyr Asn Leu Val Tyr Arg Leu Asp Ala Met Glu Ala Tyr
 260 265 270
 Asn Leu Gln Leu Val Lys Lys Ile Ala Val Lys Gly Ile Ser Ile Ser
 275 280 285
 Gly Thr Thr Ala Thr Glu Gly Phe Val Tyr Leu Glu Gly Leu Asn Leu
 290 295 300
 Tyr Pro Asp Lys Asn Pro Thr Ala Asn Ile Gly Phe Glu Ile Lys Arg
 305 310 315 320
 Thr Lys Ala Val Asn Gln Val Val Arg Ala Leu Lys Ile Asn Asp Asp

325 330 335
 Leu Tyr Ala Lys Ser Asn His Leu Glu Glu Tyr Arg Asn Asp Tyr Val
 340 345 350
 Ile Thr Asp Ile Asn Gly Val Glu Asp Ser Val Thr Phe Arg Asn Gly
 355 360 365
 Ile Lys Leu Tyr Ala Gly Asp Val Ala Gly Ser Val Asn Glu Thr Gln
 370 375 380
 Leu Arg Arg Ile Gln Ile Arg Glu Thr Ile Leu Ser His Ile Glu Lys
 385 390 395 400
 Glu Gln Glu Leu Phe Glu Lys Asp Ile Lys Val Leu Ser Leu Phe Phe
 405 410 415
 Ile Asp Glu Val Ala Lys Tyr Arg Arg Tyr Asn Pro Asp Gly Lys Gly
 420 425 430
 Glu Tyr Ala Glu Ile Phe Glu Gln Glu Tyr Thr Asp Ile Ile Lys His
 435 440 445
 Leu Asp Pro Ser Leu Phe Asn Gln Pro Glu Tyr Ile Asp Tyr Leu Lys
 450 455 460
 Ser Thr Val Ala Ser Lys Ala His Glu Gly Tyr Phe Ser Lys Asp Lys
 465 470 475 480
 Lys Gly Lys Leu Ile Asp Ser Lys Thr Glu Arg Gly Thr Lys Glu Ser
 485 490 495
 Ala Asp Glu Asp Ala Tyr Asp Leu Ile Met Lys Asn Lys Glu Arg Leu
 500 505 510
 Leu Asp Arg Lys Glu Pro Ile Arg Phe Ile Phe Ser His Ser Ala Leu
 515 520 525
 Arg Glu Gly Trp Asp Asn Pro Asn Val Phe Gln Ile Cys Thr Leu Lys
 530 535 540
 Gln Ser Ser Ala Glu Val Arg Lys Arg Gln Glu Val Gly Arg Gly Leu
 545 550 555 560
 Arg Leu Cys Val Asn Gly Gln Gly Asp Arg Met Asp Ala Asn Val Leu
 565 570 575
 Gly Glu Glu Val His Arg Val Asn Leu Leu Thr Val Ile Ala Ser Glu
 580 585 590
 Ser Tyr Glu Ser Phe Ala Lys Gly Leu Gln Thr Glu Met Ala Glu Ala
 595 600 605
 Ile Ala Asp Arg Pro Gln Lys Val Thr Ile Gln Leu Phe Lys Asp Gln
 610 615 620
 Ser Leu Arg Leu Ala Asn Gly Glu Thr Ile Ile Ala Thr Glu Asp Ile
 625 630 635 640
 Ala Gln Ser Ile Tyr Asp Ser Leu Leu Glu Asn Lys Tyr Ile Lys Lys
 645 650 655
 Gly Glu Leu Thr Asp Lys Phe Tyr Glu Asp Arg Lys Gln Gly Glu Val
 660 665 670
 Ile Phe Asp Asp Glu Leu Thr Asp Tyr Lys Ala Ser Ile Met Thr Ile
 675 680 685
 Leu Ala Ser Ile Tyr Asn Pro Arg Glu Met Gln Pro Asn Asp Ala Arg
 690 695 700
 Lys Ser Lys Ile Asn Leu Arg Leu Ser Lys Asp Lys Leu Glu Asn Ser
 705 710 715 720
 Lys Leu Gln Glu Leu Leu Lys Leu Leu Cys Ser Lys Ser Thr Tyr Thr
 725 730 735
 Val Lys Phe Asp Glu Lys Glu Leu Val Glu Arg Ala Ile Glu Ser Leu
 740 745 750
 Asn Glu Lys Leu Arg Val Ser Gln Leu Tyr Leu Ser Val Ile Thr Gly
 755 760 765
 Gln Met Glu Lys Ile Lys Ser Lys Ala Ala Leu Ile Ser Gly Glu Ala
 770 775 780
 Phe Lys Val Asp Ala Asn Gln Ala His Tyr Glu Lys Ile Asp Ala Met
 785 790 795 800

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Ala Asn Asp Gln Val Lys Tyr Asp Leu Leu Gly Lys Leu Thr Asp Ala
805 810 815
Thr Asn Leu Thr Arg Gln Ala Val Ala Gln Ile Leu Ser Arg Ile Lys
820 825 830
Pro Asn Val Phe Gly Gln Phe Lys Asn Asn Pro Glu Asp Phe Ile Ile
835 840 845
Lys Ala Ser Glu Leu Ile Asn Glu Glu Lys Ala Cys Leu Ile Val Lys
850 855 860
His Ile Glu Tyr Thr Pro Ile Asp Gln Tyr Tyr Asp Val Ser Val Phe
865 870 875 880
Thr Arg Ala Thr Ile Gln Gly Arg Leu Gly Val Asn Thr Ile Lys Ala
885 890 895
Asp Lys His Leu Tyr Asp His Val Arg Phe Asp Ser Gln Asn Glu Lys
900 905 910
Thr Phe Met Glu Arg Leu Glu Glu Asn Asp Glu Ile Glu Ala Tyr Val
915 920 925
Lys Leu Pro Gly Asn Phe Tyr Ile Pro Thr Pro Met Gly Lys Tyr His
930 935 940
Pro Asp Trp Ala Ile Val Phe Lys Gln Lys Leu Ser Lys Tyr Pro Tyr
945 950 955 960
Phe Ile Ala Glu Thr Lys Ala Ser Asp Ser Ser Leu Gln Asp Arg Arg
965 970 975
Ile Glu Glu Ala Lys Ile Glu Cys Ala Lys Lys His Phe Ala Lys Thr
980 985 990
Asn Gly Gly Lys Leu Lys Tyr Asn Lys Val Ser Ser Phe Glu Glu Leu
995 1000 1005
Leu Lys Ile Val Thr Gln Glu Ser Val
1010 1015

<210> 6110

<211> 416

<212> PRT

<213> B.fragilis

<400> 6110

Ser Gly Arg Glu Phe Ser Ala Asn Met Thr Lys Ala Glu Ile Gln Gln
1 5 10 15
Val Lys Leu Arg Phe Gly Ile Ile Gly Asn Thr Glu Ala Leu Thr Arg
20 25 30
Ala Ile Asp Val Ala Ile Gln Val Ala Pro Thr Asp Leu Ser Val Leu
35 40 45
Ile Thr Gly Glu Ser Gly Val Gly Lys Glu Ser Phe Pro Gln Ile Ile
50 55 60
His Gln Tyr Ser Arg Arg Lys His Gly Gln Tyr Ile Ala Val Asn Cys
65 70 75 80
Gly Ala Ile Pro Glu Gly Thr Ile Asp Ser Glu Leu Phe Gly His Glu
85 90 95
Lys Gly Ala Phe Thr Gly Ala Ile Gly Glu Arg Lys Gly Tyr Phe Gly
100 105 110
Glu Ala Asp Gly Gly Thr Ile Phe Leu Asp Glu Val Gly Glu Leu Pro
115 120 125
Leu Pro Thr Gln Ala Arg Leu Leu Arg Val Leu Glu Ser Gly Glu Phe
130 135 140
Ile Lys Val Gly Ser Ser Lys Val Gln Lys Thr Asp Val Arg Ile Val
145 150 155 160
Ala Ala Thr Asn Val Asn Leu Thr Gln Ala Ile Ala Glu Gly Arg Phe
165 170 175
Arg Glu Asp Leu Tyr Tyr Arg Leu Asn Thr Val Pro Ile Gln Ile Pro
180 185 190

Pro Leu Arg Glu Arg Gly Glu Asp Val Leu Leu Leu Phe Arg Lys Phe
 195 200 205
 Ala Ser Asp Phe Ala Glu Lys Tyr Arg Met Pro Ala Ile Gln Leu Thr
 210 215 220
 Glu Asp Ala Lys Arg Val Leu Leu Ser Tyr Ser Trp Pro Gly Asn Val
 225 230 235 240
 Arg Gln Leu Lys Asn Ile Thr Glu Gln Ile Ser Ile Ile Glu Thr Asn
 245 250 255
 Arg Glu Ile Asn Ala Pro Ile Leu Gln Ser Tyr Leu Pro Ala Gln Ser
 260 265 270
 Thr Gln Arg Leu Pro Ala Leu Phe Gly Val Lys Thr Gly Lys Ser Phe
 275 280 285
 Glu Ser Glu Arg Glu Ile Leu Tyr Gln Val Leu Phe Asp Met Arg Gln
 290 295 300
 Asp Val Thr Glu Leu Lys Lys Leu Val His Glu Ile Met Ser Glu Arg
 305 310 315 320
 Gly Ala Val Thr Ser Asn Val Gly Thr Phe Tyr Thr Pro Ala Pro Val
 325 330 335
 Val Ala Pro Thr Pro Ser Val Pro Ala Ile Ile His Pro Val Lys Pro
 340 345 350
 Asn Cys Pro Asp Asp Asp Asp Ile Gln Asp Thr Glu Glu Tyr Val Glu
 355 360 365
 Glu Ser Leu Ser Leu Asp Glu Val Glu Lys Glu Met Ile Arg Lys Ala
 370 375 380
 Leu Glu Lys His His Gly Lys Arg Lys Ser Ala Ala Lys Asp Leu Asn
 385 390 395 400
 Ile Ser Glu Arg Thr Leu Tyr Arg Lys Ile Lys Glu Tyr Gly Leu Glu
 405 410 415

<210> 6111

<211> 469

<212> PRT

<213> B.fragilis

<400> 6111

Phe Leu Ser Leu Asn Ile Thr Met Thr Glu Gln Leu Lys Asn Lys Leu
 1 5 10 15
 Ser Asp Ser Lys Thr Leu Arg Trp Ser Val Leu Ala Leu Val Ala Phe
 20 25 30
 Thr Met Leu Cys Gly Tyr Phe Leu Thr Asp Val Met Ser Pro Leu Lys
 35 40 45
 Pro Met Leu Glu Lys Glu Leu Leu Trp Asp Ser Leu Asp Tyr Gly Phe
 50 55 60
 Phe Thr Ser Ala Tyr Gly Trp Phe Asn Val Phe Leu Leu Met Leu Ile
 65 70 75 80
 Phe Gly Gly Ile Ile Leu Asp Lys Met Gly Val Arg Phe Thr Gly Met
 85 90 95
 Gly Ala Cys Ile Leu Met Val Leu Gly Cys Gly Leu Lys Tyr Tyr Ala
 100 105 110
 Ile Ser Thr Thr Phe Pro Glu Gly Ala Leu Ile Met Gly Phe Lys Thr
 115 120 125
 Gln Val Phe Leu Ala Ala Leu Gly Tyr Ala Ile Phe Gly Val Gly Val
 130 135 140
 Glu Ile Ala Gly Ile Thr Val Ser Lys Ile Ile Val Lys Trp Phe Lys
 145 150 155 160
 Gly Lys Glu Met Ala Leu Ala Met Gly Leu Glu Met Ala Thr Ala Arg
 165 170 175
 Ile Gly Thr Thr Leu Ala Met Val Leu Thr Val Pro Ile Ala Asp Tyr
 180 185 190

Phe Gly Tyr Thr Asp Glu Ser Gly Ser Phe His Thr Asn Ile Pro Met
 195 200 205
 Pro Ile Leu Leu Cys Leu Ile Met Leu Cys Ile Gly Thr Ile Ala Phe
 210 215 220
 Phe Ile Tyr Thr Phe Tyr Asp Lys Lys Leu Asp Ala Ser Leu Asp Ala
 225 230 235 240
 Gln Gly Glu Glu Pro Glu Glu Pro Phe Arg Met Lys Asp Val Met Leu
 245 250 255
 Ile Val Thr Asn Lys Gly Phe Trp Leu Ile Ala Leu Leu Cys Val Leu
 260 265 270
 Phe Tyr Ser Ala Val Phe Pro Phe Ile Lys Tyr Ala Thr Asp Leu Met
 275 280 285
 Val Gln Lys Tyr Asn Val Asp Pro Lys Leu Ala Gly Asn Ile Pro Gly
 290 295 300
 Leu Leu Pro Ile Gly Thr Ile Phe Leu Thr Pro Leu Phe Gly Thr Leu
 305 310 315 320
 Tyr Asp Arg Ile Gly Lys Gly Ala Thr Leu Met Ile Ile Gly Ala Val
 325 330 335
 Met Leu Ile Gly Val His Thr Leu Phe Ala Leu Pro Ile Leu Asn Val
 340 345 350
 Trp Trp Phe Ala Thr Val Ile Met Ile Val Leu Gly Ile Ala Phe Ser
 355 360 365
 Leu Val Pro Ser Ala Met Trp Pro Ser Val Pro Lys Ile Ile Pro Glu
 370 375 380
 Lys Gln Leu Gly Thr Ala Tyr Ala Leu Ile Phe Trp Val Gln Asn Trp
 385 390 395 400
 Gly Leu Met Gly Val Pro Leu Leu Ile Gly Trp Val Leu Asn Thr Tyr
 405 410 415
 Cys Lys Gly Pro Val Val Asp Gly Ala Gln Thr Tyr Asp Tyr Thr Leu
 420 425 430
 Pro Met Ala Ile Phe Ala Cys Phe Gly Val Leu Ala Leu Ile Val Ala
 435 440 445
 Leu Met Leu Lys Ala Glu Asp Lys Lys Lys Gly Tyr Gly Leu Gln Glu
 450 455 460
 Ala Asn Ile Lys Lys
 465

<210> 6112

<211> 270

<212> PRT

<213> B.fragilis

<400> 6112

Met Ile Ser Leu Thr Asp Asp Arg Lys Met Leu Gly Tyr Gly Leu Leu
 1 5 10 15
 Gly Ala Tyr Pro Asn Ile Ser His Phe Val Thr Thr Arg His Gly Gly
 20 25 30
 Tyr Ser Glu Gly Ala Tyr Ala Ser Phe Asn Cys Ser Pro Phe Ser Gly
 35 40 45
 Asp Glu Leu Glu Arg Val Glu Lys Asn Gln Thr Leu Leu Phe Gln Ser
 50 55 60
 Leu Ser Gln Ala Pro Arg His Leu Ile Ile Pro Phe Gln Thr His Gly
 65 70 75 80
 Thr Lys Ile Leu Pro Val Asp Glu Lys Phe Leu Gly Ala Ser Gly Gln
 85 90 95
 Gln Gln Gln Glu Met Leu Asn Gly Ile Asp Ala Leu Ile Thr Thr Glu
 100 105 110
 Pro Gly Cys Cys Ile Cys Ile Ser Thr Ala Asp Cys Ile Pro Val Leu
 115 120 125

Leu Tyr Asp Arg Val His His Ala Val Ala Ala Val His Ala Gly Trp
 130 135 140
 Arg Gly Thr Val Glu Tyr Ile Val Gly His Thr Leu Glu Lys Met Arg
 145 150 155 160
 Ala Val Phe Gly Thr Glu Gly Gln Asp Val Ile Ala Cys Ile Gly Pro
 165 170 175
 Gly Ile Ser Leu Gln Ser Phe Glu Val Gly Asp Glu Val Tyr Glu Ala
 180 185 190
 Phe Arg Leu Asn Gly Phe Asp Met Ser Arg Ile Ser Phe Arg His Ser
 195 200 205
 Val Thr His Lys Tyr His Ile Asp Leu Trp Glu Ala Asn Arg Gln Gln
 210 215 220
 Leu Leu Asp Phe Gly Val Pro Gly Val Gln Ile Glu Ile Ala Asp Ile
 225 230 235 240
 Cys Thr Tyr Ile Arg His Glu Asp Phe Phe Ser Ala Arg Arg Leu Gly
 245 250 255
 Ile Lys Ser Gly Arg Ile Leu Ser Gly Ile Met Ile Asn Ser
 260 265 270

<210> 6113

<211> 420

<212> PRT

<213> B.fragilis

<400> 6113

Cys Glu Ile Trp Val Tyr Phe Cys Phe Met Tyr Thr Lys Lys Phe Leu
 1 5 10 15
 Val Phe Asp Lys Asn Thr Ile Phe Ile Ile Leu Ile Leu Leu Phe Trp
 20 25 30
 Leu Phe Ala Pro Phe Leu Thr Ile Phe Leu Val Leu Leu Leu Phe Cys
 35 40 45
 Lys Arg Leu Ser Ile Cys Gln Tyr Lys Cys Met Phe Leu Val Ile Ser
 50 55 60
 Met Ser Phe Ala Leu Leu Ala Tyr Thr Gln Lys Ser Leu Phe Tyr Leu
 65 70 75 80
 Asp Thr Asp Ile Ile Arg Tyr Tyr Asn Ala Tyr Tyr Pro Phe Ile Asp
 85 90 95
 Gln Ser Phe Asp Leu Phe Ser Leu Met Phe Val Leu Glu Asn Asn Leu
 100 105 110
 Thr Phe Ser Phe Asn Leu Ile Asn Val Leu Leu Val Cys Thr Phe Ala
 115 120 125
 Asn Val Gln Ile Ile Ser Ile Phe Trp Val Phe Cys Ile Tyr Tyr Phe
 130 135 140
 Tyr Phe Leu Ser Leu Leu Lys Leu Phe Glu His Glu Gly Ile Ser Ile
 145 150 155 160
 Ser Pro Ile Asn Ile Leu Leu Val Thr Phe Ile Ser Ile Phe Gly Phe
 165 170 175
 Ile Leu Phe Thr Gln Val Thr Asp Thr Ile Lys Asn Ala Ala Ser Phe
 180 185 190
 Ala Ile Phe Phe Tyr Ala Phe Ile Cys Phe Ile Cys Asn Glu Asn Lys
 195 200 205
 Leu Lys Ile Ile Leu Leu Tyr Ile Ile Gly Val Gly Ile His Ser Ser
 210 215 220
 Ile Leu Met Leu Leu Pro Leu Phe Leu Tyr Lys Lys Ile Asn Thr Gln
 225 230 235 240
 Ile Leu Ile Leu Leu Phe Ile Leu Ala Val Leu Ile Ser Ser Arg Ile
 245 250 255
 Asn Ile Met Ser Leu Phe Ser Ile Ile Leu Pro Asp Val Gly Phe Gly
 260 265 270

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[illegible]

<400> 6114

Cys 1	Phe	Leu	Cys	Leu 5	Arg	Ser	Thr	Phe	Tyr 10	Asp	Ile	Leu	Asp	Asn 15	Ile
Phe	Ile	Met	Ile 20	Arg	Ile	Leu	Ile	Thr 25	Gly	Asp	Tyr	Cys	Pro 30	Arg	Asn
Arg	Ile	Asp 35	Asp	Leu	Ile	Asn 40	Leu	Gly 45	Lys	Tyr	Gln	Ser	Val	Phe	Glu
Asp 50	Ile	Ile	Pro	Ile	Val 55	Lys	Gly	His 60	Asp	Tyr	Ser	Ile	Val	Asn	Leu
Glu 65	Cys	Pro	Val	Val 70	Glu	His	Asp	Asp 75	Cys	Ala	Ile	Lys	Lys	Gln	Gly
Pro	Asn	Leu	Ser 85	Ser	Ser	Leu	Arg	Ala 90	Val	Glu	Ile	Leu	Lys	Leu	Leu
Asp	Phe	Asn 100	Leu	Leu	Thr	Leu	Ala 105	Asn	His	Phe	Tyr 110	Asp	Tyr	Gly	
Asp	Gly	Gly 115	Val	Lys	His	Thr 120	Leu	Glu	Cys	Cys	Lys 125	Asn	Leu	Asp	Leu
Asp 130	Phe	Val	Gly	Gly	Gly 135	Glu	Ser	Leu	Ser	Ala 140	Ala	Arg	Ala	Ile	Lys
Phe 145	Lys	Asn	Leu	Phe 150	Gly	Lys	Arg	Phe	Ala 155	Phe	Ile	Asn	Val	Cys	Glu
His	Glu	Phe	Ser 165	Ile	Ala	Thr	Gln	Thr 170	Thr	Gly	Gly	Ser	Asn	Pro	Leu
Asn	Pro	Ile 180	Ser	Asn	Tyr	Tyr 185	Asp	Ile	Gln	Lys	Ala 190	Arg	Ala	Thr	Ala
Asp	Tyr	Val 195	Ile	Ile	Ile	Val 200	His	Gly	Gly	His 205	Glu	His	Tyr	Gln	Leu
Pro	Ser 210	Leu	Arg	Met	Gln	Glu 215	Thr	Tyr	Arg	Phe 220	Phe	Ile	Asp	Ala	Gly
Ala 225	Asp	Val	Val	Val 230	Asn	His	His	Gln	His 235	Cys	Phe	Ser	Gly	Tyr	Glu
Ile	Tyr	Asn	Asn 245	Lys	Tyr	Ile	Phe	Tyr 250	Gly	Leu	Gly	Asn	Phe	Cys	Phe

Asp Asn Pro Val Lys Arg Asn Ser Ile Trp Asn Glu Gly Tyr Met Leu
 260 265 270
 Ser Leu Asn Phe Ser Asp Tyr Gly Lys Ile Asp Phe Ser Leu Ile Pro
 275 280 285
 Tyr Ile Gln Cys Asp Gln Leu Pro Lys Val Arg Leu Leu Lys Glu Ser
 290 295 300
 Glu Lys Ala Val Phe Phe Asp Lys Ile Ser Ser Leu Asn Lys Ile Ile
 305 310 315 320
 Gln Ser Pro Asp Met Leu Lys Asp Ser Phe Tyr Ala Phe Cys Met Thr
 325 330 335
 Lys Arg Arg Leu Tyr Leu Ser Leu Phe Glu Pro Tyr Pro Gly Arg Tyr
 340 345 350
 Leu Lys Tyr Ile Tyr Arg Met Gly Tyr Leu Pro Ser Phe Leu Phe Ser
 355 360 365
 Lys Thr Arg Leu Phe Ile Gln Asn Phe Met Asp Cys Glu Ser His His
 370 375 380
 Asp Ile Val Lys Glu Val Ile Lys Ile Asn Arg Lys
 385 390 395

<210> 6115
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 6115
 Glu Ile Leu Trp Gly Leu Thr Asp Glu Val Tyr Lys Gln Phe Ile Asp
 1 5 10 15
 Arg Gln Lys Thr Gly Lys Gly Ala Thr Leu Pro Val Phe Ile Leu Leu
 20 25 30
 Thr Asn Pro Val Asp Trp Ile Glu Arg Ile Thr Leu Ile Phe Ala Ile
 35 40 45
 Arg Lys Glu Asn Cys Asp Ala Glu Gly Leu Gln Arg
 50 55 60

<210> 6116
 <211> 524
 <212> PRT
 <213> B.fragilis

<400> 6116
 Met Lys Gly Leu Leu Thr Ser Ile Leu Thr Val Leu Thr Phe Thr Gly
 1 5 10 15
 Leu Gln Ala Gln Pro Leu Pro Ser Thr Pro Lys Leu Val Val Gly Leu
 20 25 30
 Thr Ile Asp Gln Leu Arg Thr Asp Tyr Leu Glu Ala Phe Ser Thr Leu
 35 40 45
 Tyr Gly Asp Arg Gly Phe Arg Arg Leu Trp Lys Glu Gly Arg Val Phe
 50 55 60
 Arg Asn Ala Glu Tyr Thr Phe Ser Gly Thr Asp Arg Ala Ser Ala Ile
 65 70 75 80
 Ala Ala Ile Tyr Thr Gly Thr Thr Pro Ser Val Asn Gly Ile Ile Gly
 85 90 95
 Lys Arg Trp Met Asp Val Ser Thr Leu Arg Thr Val Ser Cys Val Asp
 100 105 110
 Asp Pro Ala Phe Met Gly Asn Tyr Thr Asn Glu Ser Ser Ser Pro Ser
 115 120 125
 His Leu Leu Thr Ser Thr Ile Ala Asp Glu Leu Lys Ile Ala Thr Arg
 130 135 140
 Asn Glu Gly Leu Val Tyr Ala Ile Ala Pro Phe Arg Asp Ala Ala Ile

145 150 155 160
 Leu Ala Ala Gly His Ala Gly Asn Gly Ala Phe Trp Leu Asn Asn Thr
 165 170 175
 Thr Gly Lys Trp Cys Gly Thr Thr Tyr Tyr Ser Glu Phe Pro Trp Trp
 180 185 190
 Val Ser Gln Tyr Asn Asp Arg Asn Ala Ile Asp Phe Arg Ile Ala Asp
 195 200 205
 Met Thr Trp Thr Pro Val His Pro Val Gln Ser Tyr Ser Phe Leu Pro
 210 215 220
 Glu Trp Arg Asp Ala Ala Phe Lys Tyr Lys Phe Asp Asp Asp Arg Val
 225 230 235 240
 Asn Lys Tyr Lys Arg Leu Ile Thr Ser Pro Phe Ile Asn Asp Glu Ile
 245 250 255
 Asn Thr Leu Thr Glu Glu Leu Leu Asp Lys Ser Thr Met Gly Lys Asp
 260 265 270
 His Val Pro Asp Met Leu Ala Leu Thr Tyr Tyr Ala Gly Asn Tyr Ala
 275 280 285
 His Lys Ser Val Gln Glu Cys Ala Met Glu Met Gln Asp Thr Tyr Val
 290 295 300
 Arg Leu Asp Arg Ser Ile Ala Ser Leu Leu Asp Ile Ile Asp Lys Lys
 305 310 315 320
 Val Gly Leu Gln Asn Val Val Phe Phe Ile Thr Ser Thr Gly Tyr Thr
 325 330 335
 Asp Thr Glu Ser Pro Asp Leu Gly Leu Tyr Arg Val Pro Thr Ser Glu
 340 345 350
 Phe His Leu Asn Arg Cys Ala Ala Leu Leu Asn Met Tyr Leu Met Ala
 355 360 365
 Thr Tyr Gly Gln Gly Gln Tyr Val Glu Ala Tyr Tyr Asp Gln Gln Ile
 370 375 380
 Tyr Leu Asn His Lys Leu Ile Glu Glu Lys Gln Leu Asn Leu Ala Asp
 385 390 395 400
 Ile Gln Glu Lys Ala Ala Glu Phe Leu Ile Gln Phe Ser Gly Val Asn
 405 410 415
 Glu Val Tyr Ser Gly Lys Arg Leu Leu Leu Gly Ser Trp Thr Pro Asp
 420 425 430
 Ile Ser Met Ile Arg Asn Ser Phe His Arg Lys Arg Ser Gly Asp Leu
 435 440 445
 Leu Ile Asp Val Leu Pro Gly Trp Ser Ile Val Asn Glu Asn Thr Ser
 450 455 460
 Asp His Lys Val Val Arg Lys Ala His Ile Pro Ser Pro Leu Ile Phe
 465 470 475 480
 Met Gly Ser Gly Val Lys Pro Ala Val Ile Asn Thr Pro Val Thr Ile
 485 490 495
 Asp His Ile Ala Pro Thr Val Ala His Ile Leu Arg Ile Arg Ser Pro
 500 505 510
 Asn Ala Cys Ser Ala Thr Pro Ile Thr Asp Ile Arg
 515 520

<210> 6117

<211> 182

<212> PRT

<213> B.fragilis

<400> 6117

Asn Cys Ser Arg Ser Asn Leu Met Asn Leu Ser Phe Ala Ala Ile Asp
 1 5 10 15
 Phe Glu Thr Ala Thr Gly Tyr Met Glu Ser Ala Cys Ala Val Gly Ile
 20 25 30
 Val Thr Val Thr Asp Gly Glu Ile Thr Asp Glu Tyr Tyr Ser Leu Ile

35 40 45
 Gln Pro Pro Glu Asn Glu Tyr Trp Arg Ala Asn Met Leu Val His Gly
 50 55 60
 Ile Thr Pro Gly Met Thr Glu Ser Leu Pro Gly Phe His Ala Ile Tyr
 65 70 75 80
 Pro Glu Val Lys Lys Arg Leu Gln Gly Asn Val Val Val Ala His Asn
 85 90 95
 Glu Gln Phe Asp Arg Asn Val Leu Lys Asn Thr Met Arg Met Tyr Gly
 100 105 110
 Leu Asp Tyr Asp Glu Leu Ser Leu Pro Glu Arg Trp Glu Cys Thr Cys
 115 120 125
 Arg Ile Tyr Arg Ser Leu Gly Tyr Lys Pro Val Asn Leu Ser Ala Cys
 130 135 140
 Cys Glu Arg Glu Gly Ile Glu Leu Lys His His Glu Ala Leu Ser Asp
 145 150 155 160
 Ala Arg Gly Cys Ala Lys Leu Tyr Leu Asn Phe Leu Glu Lys Tyr Arg
 165 170 175
 Pro Leu Ser Thr Leu Trp
 180

<210> 6118
 <211> 135
 <212> PRT
 <213> B.fragilis

<400> 6118
 Leu Leu Thr Leu Asn Gln Asn Asn Lys Met Tyr Leu Leu Leu Val Ile
 1 5 10 15
 Leu Met Val Ile Ala Ala Ile Leu Met Cys Phe Ile Val Leu Ile Gln
 20 25 30
 Asn Ser Lys Gly Gly Gly Leu Ala Ser Gly Phe Ser Ser Ser Asn Gln
 35 40 45
 Ile Met Gly Val Arg Lys Thr Thr Asp Phe Leu Glu Lys Ala Thr Trp
 50 55 60
 Gly Leu Ala Ala Phe Met Val Val Met Ser Ile Ala Thr Ala Tyr Val
 65 70 75 80
 Val Pro Thr Ser Ser Ser Lys Thr Gln Asp Val Ile Met Glu Gln Ala
 85 90 95
 Gln Gln Glu Glu Gln Thr Asn Pro Tyr Asn Leu Pro Val Gly Thr Thr
 100 105 110
 Ala Pro Lys Thr Asp Ala Ala Ala Pro Val Glu Ala Pro Ala Thr Glu
 115 120 125
 Thr Pro Ala Thr Pro Ala Asn
 130 135

<210> 6119
 <211> 421
 <212> PRT
 <213> B.fragilis

<400> 6119
 Phe Tyr Pro Arg Ile Thr Glu Arg Lys Thr Phe Phe Tyr Tyr Phe Cys
 1 5 10 15
 Ile Thr Leu Leu Thr Leu Arg Asp Phe Thr Asn Met Lys Arg His Val
 20 25 30
 Phe Leu Leu Val Thr Leu Phe Thr Met Ser Thr Val Ala Ala Gln Gln
 35 40 45
 Gln Pro Ile Ile Ser Pro Lys Asp Ser Ile Pro Ser Val Ile Glu Arg
 50 55 60

Val Thr Gly Lys Glu Asn Lys Gly Phe Ser Ala His Met Asn Leu Gln
 65 70 75 80
 Leu Tyr Thr Ser Cys Ala Ala Ser Phe Thr Glu Asn Glu Leu Asp Glu
 85 90 95
 Val Ala Phe Lys Leu Asn Arg Phe Lys Leu Glu Ile Ile Gly Asn Ile
 100 105 110
 Asn Arg Lys Phe Ser Tyr His Phe Arg Gln Ser Phe Asn Lys Tyr Ser
 115 120 125
 Asn Pro Phe Ala Leu Asp Asn Leu Ser Ser Ser Val Glu Tyr Ala Tyr
 130 135 140
 Leu Thr Tyr His Leu Ser Asp Arg Phe Ser Ile Thr Ala Gly Lys Gln
 145 150 155 160
 Phe Leu Met Leu Gly Gly Tyr Glu Tyr Tyr Val Asn Pro Ile Lys Val
 165 170 175
 Arg Glu Phe Ser Glu Phe Asn Asn Tyr Val Asn Cys Phe Leu Ala Gly
 180 185 190
 Val Ser Ala Thr Trp Asn Val Thr Pro Thr Gln Glu Leu Asn Phe Gln
 195 200 205
 Ile Val Asn Asn Arg Asn Gly Gly Asp Ala Asp Thr Tyr Leu His Gly
 210 215 220
 Leu Pro Thr Asp Val Glu Ala Thr Lys Val Pro Leu Ile Ser Thr Ile
 225 230 235 240
 Asn Trp Asn Ser Tyr Tyr Leu Asp Lys Ala Ile Gln Leu Arg Tyr Ala
 245 250 255
 Ala Ser Trp Gly Gln Gln Ala Lys Gly Arg Asn Ile Met Tyr Leu Thr
 260 265 270
 Ala Gly Asn Val Tyr Glu Lys Gly Pro Trp Ile Ala Tyr Met Asp Phe
 275 280 285
 Met Tyr Ser Arg Gln Gly Ile Asp Asn Lys Gly Ile Ile Ser Ala Leu
 290 295 300
 Pro Arg Ile Asp Leu Glu Asn Pro Gln Thr Ala Gln His Thr Glu Tyr
 305 310 315 320
 Phe Thr Thr Ile Ala Asn Val Asp Tyr Arg Phe His Pro Asn Trp Asn
 325 330 335
 Ala Tyr Leu Lys Gly Ile Tyr Glu Ser Gly Lys Ile Tyr Lys Ala Asn
 340 345 350
 Gly Ile Phe Glu Lys Gly Thr Tyr Arg Arg Thr Trp Cys Gly Gln Val
 355 360 365
 Cys Val Glu Tyr Tyr Pro Met Arg Asn Ser Glu Leu Leu Ile Phe Leu
 370 375 380
 His Tyr Gln Tyr Lys Arg Asn Lys Leu Leu Lys Pro Ala Arg Asn Leu
 385 390 395 400
 Asp Ala Ile Asp Pro Asn Thr Gln Arg Ile Ser Leu Gly Leu Val Tyr
 405 410 415
 Ser Ile Pro Val Phe
 420

<210> 6120

<211> 898

<212> PRT

<213> B.fragilis

<400> 6120

Gln Thr Asn Arg Met Lys Tyr Ile Ile Tyr Phe Met Met Met Leu Tyr
 1 5 10 15
 Gly Ser Leu Cys His Ala Ile Val Cys Lys His Ile Val Glu Arg Ser
 20 25 30
 Glu Thr Asn Thr Arg Lys Val Tyr Gln Ile Gln Arg Asp Ala Leu Gly
 35 40 45

Tyr Met Trp Phe Met Asn His Ala Gly Ile Ser Arg Phe Asp Gly Thr
 50 55 60
 Lys Leu Lys His Tyr Lys Leu Pro Ala Glu Gly Arg Thr Met Asp Tyr
 65 70 75 80
 Tyr Met Gly Asn Cys Arg Leu Leu Thr Asp Asn Arg Asn Gly Leu Trp
 85 90 95
 Val Val Thr Arg Asn Gly Tyr Leu Trp Met Tyr Asn Pro Ser Leu Asp
 100 105 110
 Lys Phe Glu Cys Arg Asn His Leu Val Ile Pro Asn Asp Val Ser Leu
 115 120 125
 His Phe Leu Cys Val Asp Asn Ser Ser His Ile Trp Phe Ser Val Gly
 130 135 140
 Asn Arg Leu Ile Ala Tyr Gln Ile Leu Ser Asn Thr Phe His Arg Val
 145 150 155 160
 Asp His Ser Leu Ala Ala Ile Ser Cys Met Val Glu Val Ala Pro Gly
 165 170 175
 Glu Tyr Phe Val Gly Ser Asp Glu Gly Leu Phe Gly Ile Thr Ile Lys
 180 185 190
 Asn Tyr Ala Val Asp Arg Gln Thr Gly Glu Leu Ser Gly Lys Arg Tyr
 195 200 205
 Ser Arg Ile His Glu Ile Leu Phe His Pro Tyr Thr Gln Arg Leu Val
 210 215 220
 Met Phe Asp Tyr Ser Glu Gly Leu Gly Val Trp Asp Met Lys Ser Glu
 225 230 235 240
 Gln Leu Val Gly Thr Trp Asn Arg Leu Leu Asn Ser Arg Val Ser Gly
 245 250 255
 Leu Arg Ile Trp Asp Asp Arg Thr Val Leu Val Ala Thr Asp Gly Glu
 260 265 270
 Gly Ile Phe Arg Met Asp Ile Val Asn Pro Asp Ile Thr Ser Phe Ile
 275 280 285
 Gln Thr Asp Phe Glu Asn Asp Asn Ser Ile Arg Thr Asn Arg Ile Ala
 290 295 300
 Asp Val Phe Val Asp Asp Gln Lys Leu Ile Trp Val Ala Asp Tyr Pro
 305 310 315 320
 Glu Gly Val Ser Met Ile Asp Val Glu Ser Pro Asp Asp Tyr Lys Trp
 325 330 335
 Tyr Arg Ala Arg Ser Gly Asp Ser His Ser Leu Thr Asn Asn Arg Val
 340 345 350
 Asn Ala Val Leu His Asp Ser Asp Gly Asp Val Trp Phe Ala Thr Asp
 355 360 365
 His Gly Ile Ser Cys Phe His Pro Ser Thr Gly Leu Trp Asn Arg Ile
 370 375 380
 Val Thr Pro Leu Pro Cys Gln Met Tyr Thr Ala Leu Cys Glu Val Lys
 385 390 395 400
 Pro Gly Glu Ile Cys Ala Gly Asn Tyr Val His Gly Leu Phe Phe Ile
 405 410 415
 Arg Lys Lys Ser Asn Tyr Ser Val Thr Pro Tyr Val Arg Ile Ser Gly
 420 425 430
 Val Asn Ala Leu Cys Arg Lys Asp Lys Asp Gly Phe Trp Ile Gly Thr
 435 440 445
 Asp Glu Gly Val Phe Phe Tyr Cys Pro Glu Asn Asp Ser Ile Val Glu
 450 455 460
 Val Lys Arg Leu Ser Gly Leu His Ile His Ala Leu His Gln Ser Asp
 465 470 475 480
 Asp Cys Leu Tyr Ile Gly Thr Glu Gly Asn Gly Leu Met Val Tyr His
 485 490 495
 Pro Glu His Glu Gln Met Asp Thr Val Ala Ala Leu Gly Thr Gly Asn
 500 505 510
 Val Tyr Ala Val Trp Ser Asp Asp Ser Arg Arg Leu Met Gly Ser Ser

515	520	525
Asp Gly Phe Ala Phe Ser Leu	Asp Leu Val Gln His Ser Tyr Tyr Arg	
530	535	540
Phe Leu Ser Lys Gly Ile Arg	Ile Thr Ser Gly Thr Phe Leu Gly Asn	
545	550	555
Gly Arg Tyr Ile Leu Gly Thr Tyr	Gln Gly Ala Ile Glu Tyr Asp Lys	
565	570	575
Gln Lys Ala Arg Pro Leu Arg Lys	Ala Cys Leu Gly Phe Tyr Leu Asp	
580	585	590
Glu Leu Arg Val Leu Asp Lys Glu	Val Thr Val Glu Thr Glu Asn Ser	
595	600	605
Pro Leu Lys Lys Ala Leu Asn Cys	Thr Ala Thr Leu Gln Leu Glu His	
610	615	620
Asn Glu Asn Thr Phe Ser Phe Thr	Ala Thr Ala Ile Arg Tyr Thr Glu	
625	630	635
Lys Gln Asp Ile Ala Tyr Ser Trp	Lys Leu Asp His Thr Asp Trp Ser	
645	650	655
Ala Pro Ser Val Asp Asn Arg Ile	Arg Phe Ser Asn Leu Pro Pro Gly	
660	665	670
Glu Tyr Ile Phe Ser Val Arg Ala	Leu Ser Ile Asp Asn Gly Arg Pro	
675	680	685
Phe Ala Gln Arg Asn Met His Ile	Ile Ile Arg Gln Pro Leu Trp Lys	
690	695	700
Thr Gly Gly Ala Phe Leu Cys Tyr	Gly Leu Leu Ala Leu Met Leu Gly	
705	710	715
Ser Leu Ala Val Arg Ser Trp Phe	Val Trp Gln Asp Arg Asn Leu Ser	
725	730	735
Arg Glu Gln Val Arg Leu Phe Ala	Asn Thr Thr Arg Asn Leu Cys Leu	
740	745	750
Pro Leu Thr Leu Ile Lys Val Pro	Leu Glu Tyr Leu Tyr Glu Lys Ser	
755	760	765
Ser Ser Glu Leu Val Ser Asn Val	Leu Gln Gln Ile Lys Gly Val Asn	
770	775	780
Asn Leu Leu Ala Glu Leu Glu Asn	Ile Ser Arg Val Ser Ala Ala Pro	
785	790	795
Gly Arg Leu Ser Leu Ala Asp Tyr	Glu Leu Ser Ile Phe Leu Lys Glu	
805	810	815
Thr Val Ala Arg Ile Arg Asp Tyr	Ile Ser Glu Lys Asp Ile Met Leu	
820	825	830
Arg Trp Thr Glu Glu Pro Ala Phe	Ala Thr Val Cys Leu Asp Lys Asp	
835	840	845
Lys Met Ser Ala Ile Leu Arg Asn	Leu Leu Met Ala Phe Thr Asp Ser	
850	855	860
Met Asp Arg Gly Asp Glu Ile Leu	Leu Ser Thr Ser Cys Asn Asn Gln	
865	870	875
Lys Trp Glu Leu Arg Leu Glu Ser	Glu Asp Asn Gly Phe Leu Lys Lys	
885	890	895
Lys Phe		

<210> 6121

<211> 260

<212> PRT

<213> B.fragilis

<400> 6121

Arg Asn Gly Ser Lys Leu Val Ile Arg Met Ile Ser Ala Asn Leu Gln
1 5 10 15
Gln Trp Ile Gln His Pro Glu Thr Leu Asn Lys Asp Thr Leu Tyr Glu

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<210> 6122
<211> 83
<212> PRT
<213> B.fragilis
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[illegible]

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<211> 311
<212> PRT
<213> B.fragilis
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Tyr Cys Glu Arg Ser Asp Lys Asp Lys Ser Lys Met Asn Tyr Lys Arg
1 5 10 15

Ile Leu Lys Asn Gln Thr Thr Arg Leu Ala Met Leu Arg Ala Leu Ser
 20 25 30
 Phe Ile Pro Asp Ala Ile Met Leu Arg Leu Gln Tyr Trp Ile Lys Thr
 35 40 45
 Gly His Lys Leu Asn Leu Asn Lys Pro Gln Arg Tyr Thr Glu Lys Ile
 50 55 60
 Gln Ser Tyr Lys Cys Phe Tyr Arg Asn Pro Leu Lys Val Cys Ser
 65 70 75 80
 Asp Lys Tyr Met Val Arg Asp Tyr Val Ala Ser Lys Gly Met Ala Lys
 85 90 95
 Tyr Leu Asn Glu Leu Tyr Gly Ile Tyr Asp Ser Ala Glu Asp Ile Cys
 100 105 110
 Phe Asp Ser Leu Pro Asn Glu Phe Val Ile Lys Ser Thr Asp Gly Gly
 115 120 125
 Gly Ser Asn Asn Ile Ile Ile Cys Lys Asn Lys Asp Glu Leu Asn Ile
 130 135 140
 Phe Glu Thr Ile Lys Thr Val Asn Ser Trp Leu Lys Leu Asn Arg Lys
 145 150 155 160
 Val Asn Pro Gly Arg Glu Trp Gly Tyr Leu Gly Gly Arg Pro Arg Val
 165 170 175
 Ile Ile Glu Lys Leu Ile Lys Asn Ile Asn Ser Glu Thr Ser Leu Thr
 180 185 190
 Asp Tyr Lys Met Tyr Cys Phe Cys Gly His Val His Ser Leu Phe Val
 195 200 205
 Leu Thr Asp Arg Asp Lys Gly Ala Lys Ile Asn Phe Phe Asp Arg Asn
 210 215 220
 Trp Asn Pro Leu Asn Val Lys Ser Asp Ser Tyr Pro Thr Ser Asn Gln
 225 230 235 240
 Leu Ile Leu Lys Pro Lys Asn Phe Asp Arg Met Ile Glu Ile Ala Glu
 245 250 255
 Val Leu Ser Glu Asp Phe Pro His Val Arg Ile Asp Leu Tyr Asn Ile
 260 265 270
 Asp Gly Asn Ile Ile Phe Gly Glu Met Thr Phe Tyr Ser Gly Ser Gly
 275 280 285
 Tyr Trp Gly Phe Val Pro Asp Ser Phe Asp Phe Glu Leu Gly Gln Gln
 290 295 300
 Phe Asp Ile Ser Ser Phe Ile
 305 310

<210> 6124
 <211> 144
 <212> PRT
 <213> B.fragilis

<400> 6124
 Gly Thr Met Ser Leu His Lys Tyr Ser Ile Val Leu Leu Ala Leu Leu
 1 5 10 15
 Ala Leu Leu Cys Ser Cys His Asp Glu Asp Lys Gly Asp Ile Pro Gln
 20 25 30
 Ser Asp Glu Arg Thr Ala Asp Phe Ile Val Lys Tyr Lys Asp Asp Phe
 35 40 45
 Gly Ile His Thr Asp Tyr Lys Ala Lys Val Tyr Ile Tyr Tyr Gly Ile
 50 55 60
 Tyr Ser Met Asp Ile Val Gly Phe His Tyr Leu Pro Asp Gly Val Leu
 65 70 75 80
 Asp His Glu Gly Lys Glu Ile Thr Pro Asp Ile Arg Leu Ser Ala Asp
 85 90 95
 Gly Lys Glu Asp Ile Thr Leu Leu Leu Asp Asn Ala Glu Lys Val Thr
 100 105 110

Val	Ile	Val	Glu	Ser	Ser	Tyr	Tyr	Glu	Gly	Arg	Val	Gly	Ile	Thr	Ser
		115						120				125			
Tyr	Ser	Ser	Gly	Asp	Thr	Pro	Ile	Lys	Gly	Asn	Ile	Thr	Phe	Gly	Glu
		130				135					140				

<210> 6125

<211> 303

<212> PRT

<213> B.fragilis

<400> 6125

Asp	Leu	Met	Arg	Val	Ser	Val	Val	Ile	Pro	Ser	Tyr	Asn	Arg	Ala	Lys
1				5					10					15	
Leu	Leu	Leu	Glu	Thr	Ile	Pro	Thr	Tyr	Leu	Gln	Glu	Asp	Val	Ile	Glu
			20					25					30		
Val	Ile	Ile	Val	Asp	Asp	Ala	Ser	Val	Asp	Asn	Thr	Ala	Glu	Val	Val
		35				40					45				
Lys	Lys	Ile	Gln	Glu	Lys	Tyr	Pro	Gln	Val	Lys	Tyr	Ile	Arg	Asn	Ala
	50					55					60				
Val	Asn	Lys	Lys	Gln	Thr	Tyr	Ser	Lys	Asn	Ile	Gly	Ile	Lys	Ile	Ser
65					70					75				80	
Lys	Gly	Asp	Tyr	Ile	Tyr	Leu	Gly	Asp	Asp	Ser	Ile	Leu	Met	Pro	
				85				90					95		
Asn	Ser	Ile	Arg	Tyr	Leu	Lys	Glu	Thr	Met	Tyr	Lys	Tyr	Asn	Ala	Asp
			100					105					110		
Ile	Cys	Gly	Ala	Lys	Ala	Leu	Tyr	Leu	Pro	Met	Glu	Tyr	Val	Asn	Lys
		115					120					125			
Ile	Asp	Glu	Tyr	Val	Gln	Leu	Asn	Asp	Ile	Gln	Leu	Val	Asp	Lys	Asn
	130					135					140				
Glu	Ile	Val	Asp	Ile	Lys	Lys	Ile	Lys	Ala	Ser	Phe	Asn	Tyr	Ser	Thr
145					150					155				160	
Ala	Leu	Pro	Ile	Val	Val	Pro	Phe	Cys	Gln	Ala	Cys	Ala	Leu	Val	Lys
				165					170				175		
Lys	Glu	Leu	Ala	Ile	Gln	Ile	Leu	Phe	Asp	Glu	Asn	Phe	Thr	Gly	Asn
			180					185					190		
Ala	Tyr	Arg	Glu	Glu	Thr	Asp	Phe	Phe	Ile	Arg	Cys	Thr	Leu	Gln	Gly
	195					200						205			
Ala	Lys	Val	Met	Tyr	Asp	Ser	Arg	Ala	Val	Gln	Val	Asn	Leu	Pro	Arg
	210					215					220				
Gln	Val	Ala	Thr	Gly	Gly	Ala	His	Ser	Arg	Gly	Arg	Ile	Lys	Trp	Tyr
225					230					235				240	
Leu	Ser	Thr	Ile	Ala	Asn	Asn	Trp	Tyr	Phe	Leu	Lys	Lys	Asn	Trp	Lys
				245						250				255	
Asn	Ile	Gln	Ser	Tyr	Tyr	Lys	Phe	Ser	Asp	Asn	Ile	Tyr	Lys	Arg	Gln
			260					265					270		
Leu	Met	Phe	Val	Leu	Lys	Asn	Ile	Cys	Phe	Ala	Ser	Lys	Ala	Val	Val
		275					280					285			
Lys	Ile	Leu	Met	Arg	Asn	Leu	Gly	Leu	Leu	Leu	Leu	Tyr	Val	Tyr	
	290					295					300				

<210> 6126

<211> 63

<212> PRT

<213> B.fragilis

<400> 6126

Cys	Ile	Arg	Ser	Gln	His	Phe	Arg	Ser	Asn	His	Phe	Gly	His	His	Tyr
1				5					10					15	
Arg	His	Leu	Tyr	Asn	Asp	Tyr	Thr	Leu	Phe	Ile	Asn	His	Arg	Val	Gly

	20		25		30
Asp	Lys	Ile	Ile	Leu	Gly
	35		40		45
Gly	Asn	Pro	Glu	Arg	Leu
	50		55		60

<210> 6127
 <211> 79
 <212> PRT
 <213> B.fragilis

	1		5		10		15
Arg	Met	Arg	Ser	Val	Met	Glu	Gly
	1		5		10		15
Asp	Ala	Gly	Asn	Gly	Gly	Leu	Glu
	20		25		30		35
Asp	Leu	Asn	Gly	Phe	Leu	Cys	Asp
	35		40		45		50
Ala	Tyr	Phe	Ile	Ile	Phe	Lys	Leu
	50		55		60		65
Phe	Phe	Gly	Thr	Phe	Asp	Leu	Cys
	65		70		75		80

<210> 6128
 <211> 375
 <212> PRT
 <213> B.fragilis

	1		5		10		15
Ser	Arg	Arg	Arg	Lys	Leu	Thr	Asn
	1		5		10		15
Lys	Ile	Gly	Ile	Thr	Gln	Gly	Asp
	20		25		30		35
Ile	Leu	Lys	Thr	Phe	Ala	Asp	Pro
	35		40		45		50
Val	Ile	Tyr	Gly	Ser	Pro	Lys	Val
	50		55		60		65
Asp	Leu	Pro	Thr	Asn	Phe	Ser	Ile
	65		70		75		80
His	Asn	Arg	Leu	Ser	Val	Val	Asn
	85		90		95		100
Glu	Phe	Ser	Lys	Pro	Asp	Pro	Glu
	100		105		110		115
Leu	Glu	Lys	Ala	Ile	Glu	Glu	Phe
	115		120		125		130
Val	Thr	Ala	Pro	Ile	Asn	Lys	His
	130		135		140		145
Phe	Pro	Gly	His	Thr	Glu	Tyr	Ile
	145		150		155		160
Lys	Ser	Leu	Met	Ile	Leu	Met	Lys
	165		170		175		180
Thr	Gly	His	Ile	Pro	Val	Arg	Glu
	180		185		190		195
Leu	Ile	Gln	Glu	Lys	Leu	Ala	Ile
	195		200		205		210
Phe	Gly	Ile	Gly	Ala	Pro	Arg	Ile
	210		215		220		225
Ala	Gly	Asp	Asp	Gly	Leu	Leu	Gly
	225		230		235		240

Pro Ala Ile Gln Glu Met Ala Ala Lys Gly Ile Leu Cys Tyr Gly Pro
 245 250 255
 Tyr Pro Ala Asp Gly Phe Met Gly Ser Gly Asn Phe Thr His Phe Asp
 260 265 270
 Gly Val Leu Ala Met Tyr His Asp Gln Gly Leu Ala Pro Phe Lys Ala
 275 280 285
 Leu Ala Met Asp Glu Gly Val Asn Tyr Thr Ala Gly Leu Pro Val Ile
 290 295 300
 Arg Thr Ser Pro Ala His Gly Thr Ala Tyr Asp Ile Ala Gly Lys Gly
 305 310 315 320
 Val Ala Cys Glu Asp Ser Phe Arg Gln Ala Ile Tyr Val Ala Ile Asp
 325 330 335
 Val Phe Arg Asn Arg Gln Arg Glu Lys Glu Ala His Ala Asn Pro Leu
 340 345 350
 Arg Lys Gln Tyr Tyr Glu Lys Arg Asp Asp Ser Asp Lys Leu Lys Leu
 355 360 365
 Asp Thr Val Asp Asp Asp Ile
 370 375

<210> 6129

<211> 172

<212> PRT

<213> B.fragilis

<400> 6129

Met Pro Gly Arg Cys Val Leu Tyr Phe Pro Ala Val Gly Ile His Cys
 1 5 10 15
 Ile Leu Phe Phe Asn Leu Lys Ser Tyr Cys Val Met Phe Ser Leu Leu
 20 25 30
 Leu Ser Thr Phe Ala Met Met Gly Leu Thr Phe Val Ile Gly Phe Phe
 35 40 45
 Val Ala Gly Val Ile Lys Leu Ile Ala Ser Ala Ala Asp Ser Leu Ala
 50 55 60
 Phe Tyr Ser Ser His Gln Glu Glu Leu Ala Arg Leu Lys Arg Ile Arg
 65 70 75 80
 Lys Leu His Gln Lys Val Ala Thr Leu Ile Thr Glu Ser Ala Leu Ser
 85 90 95
 Asp Glu Glu Tyr Gly Ser Asp Gly Arg Glu Asp Phe Ser Arg Gly Val
 100 105 110
 Thr Lys His Pro Gly Asp Asn Arg Gly Phe Tyr His Gly Val Ser Pro
 115 120 125
 Gly Glu Ser Glu Arg Gly Leu Met Asp Tyr Phe Tyr Pro Glu Asp Thr
 130 135 140
 Arg Thr Met Phe Leu Arg Lys Glu Glu Gln Met Leu Gln His Asp Lys
 145 150 155 160
 Lys Asn Asn Lys Thr Ser Ser Thr Asn Lys Lys Gln
 165 170

<210> 6130

<211> 123

<212> PRT

<213> B.fragilis

<400> 6130

Asn Met Lys Gly Ile Tyr Ala Ile Ser Leu Leu Val Val Ser Asn Ile
 1 5 10 15
 Phe Met Thr Phe Ala Trp Tyr Gly His Leu Lys Leu Gln Glu Thr Lys
 20 25 30
 Ile Ile Ser Asn Trp Pro Leu Tyr Gly Val Val Leu Phe Ser Trp Val

35	Ile	Ala	Leu	Ala	Glu	Tyr	Ser	Cys	Gln	Val	Pro	Ala	Asn	Arg	Leu	Gly
50	Phe	Ser	Gly	Asn	Gly	Gly	Pro	Phe	Ser	Leu	Met	Gln	Leu	Lys	Ile	Ile
65	Gln	Glu	Val	Ile	Thr	Leu	Ile	Ile	Phe	Thr	Val	Phe	Ser	Thr	Leu	Leu
	Phe	Lys	Gly	Glu	Ser	Leu	His	Trp	Asn	His	Val	Ala	Ala	Phe	Val	Cys
	Leu	Ile	Ala	Ala	Val	Tyr	Phe	Val	Phe	Met	Arg					
115																

<210> 6131
 <211> 440
 <212> PRT
 <213> B.fragilis

<400> 6131	Ser	Ile	Ile	Met	Lys	Ile	Ala	Ile	Val	Gly	Thr	Gly	Tyr	Val	Gly	Leu
1	Val	Thr	Gly	Thr	Cys	Phe	Ser	Glu	Met	Gly	Val	Asp	Val	Thr	Cys	Val
	Asp	Val	Ile	Glu	Ser	Lys	Ile	Asp	Asn	Leu	Lys	Lys	Gly	Ile	Ile	Pro
	Ile	Tyr	Glu	Pro	Gly	Leu	Glu	Asp	Met	Val	His	Arg	Asn	Tyr	Asn	Ala
	Gly	Arg	Leu	Lys	Phe	Thr	Thr	Ser	Leu	Ala	Ser	Cys	Leu	Asp	Asp	Val
	Glu	Val	Val	Phe	Ser	Ala	Val	Gly	Thr	Pro	Pro	Asp	Glu	Asp	Gly	Ser
	Ala	Asp	Leu	Lys	Tyr	Val	Leu	Glu	Val	Ala	Arg	Thr	Ile	Gly	Lys	Thr
	Met	Asn	His	Tyr	Val	Leu	Val	Val	Thr	Lys	Ser	Thr	Val	Pro	Val	Gly
	Thr	Ala	Gln	Gln	Val	Lys	Ala	Thr	Ile	Arg	Gly	Glu	Leu	Asp	Lys	Arg
	Gly	Leu	Asn	Leu	Glu	Phe	Asp	Val	Ala	Ser	Asn	Pro	Glu	Phe	Leu	Lys
	Glu	Gly	Asp	Ala	Val	Asp	Asp	Phe	Met	Lys	Pro	Asp	Arg	Val	Val	Val
	Gly	Val	Glu	Ser	Glu	Arg	Ala	Lys	Ser	Ile	Met	Glu	Arg	Leu	Tyr	Lys
	Pro	Phe	Met	Met	Asn	Asn	Tyr	Arg	Leu	Ile	Phe	Thr	Asp	Ile	Pro	Ser
	Ala	Glu	Met	Ile	Lys	Tyr	Ala	Ala	Asn	Ser	Met	Leu	Ala	Thr	Arg	Ile
	Ser	Phe	Met	Asn	Asp	Ile	Ala	Asn	Leu	Cys	Glu	Leu	Val	Gly	Ala	Asn
	Val	Asn	Met	Val	Arg	Lys	Gly	Ile	Gly	Ala	Asp	Ser	Arg	Ile	Gly	Ser
	Lys	Phe	Leu	Tyr	Pro	Gly	Cys	Gly	Tyr	Gly	Gly	Ser	Cys	Phe	Pro	Lys
	Asp	Val	Lys	Ala	Leu	Ile	Lys	Thr	Ala	Asp	Lys	Asn	Gly	Tyr	Ser	Met
	Arg	Val	Leu	Lys	Ala	Val	Glu	Glu	Val	Asn	Asn	Ser	Gln	Lys	Ser	Ile
	Leu	Phe	Asn	Lys	Leu	Ile	Arg	Tyr	Phe	Asp	Gly	Asn	Leu	Ser	Gly	Lys
	Arg	Ile	Ala	Leu	Trp	Gly	Leu	Ser	Phe	Lys	Pro	Glu	Thr	Asp	Asp	Met

325 330 335
 Arg Glu Ala Pro Ala Leu Val Leu Ile Asp Lys Ile Leu Ser Cys Gly
 340 345 350
 Gly Leu Val Lys Ala Tyr Asp Pro Ile Ala Val Glu Glu Cys Lys Arg
 355 360 365
 Arg Ile Gly Asp Ser Ile Glu Tyr Ala Asn Asp Met Tyr Asp Ala Val
 370 375 380
 Leu Asp Ala Asp Ala Leu Leu Val Thr Glu Trp Lys Glu Phe Arg
 385 390 395 400
 Met Pro Ser Trp Gly Val Leu Lys Lys Thr Met Asn Arg Ala Leu Ile
 405 410 415
 Ile Asp Gly Arg Asn Ile Tyr Asp Lys Lys Glu Leu His Asp Met Gly
 420 425 430
 Phe Glu Tyr Thr Cys Ile Gly Gln
 435 440

<210> 6132

<211> 699

<212> PRT

<213> B.fragilis

<400> 6132

Gly Pro Ser Ile Phe Ala Val Ser Lys Thr Lys Ile Met Met Lys Val
 1 5 10 15
 Lys Leu Ala Leu Leu Leu Thr Leu Ile Gly Thr Leu Pro Leu Ala Ala
 20 25 30
 Gln Asn Val Arg Gln Glu Gln Asp Thr Val Ser Tyr Met Asn Asp Asp
 35 40 45
 Pro Phe Asn Leu Glu Gln Ile Val Val Thr Ala Thr Arg Thr Glu Lys
 50 55 60
 Lys Ile Lys Asn Thr Pro Val Ile Thr Gln Ile Ile Thr Ser Lys Gln
 65 70 75 80
 Ile Glu Glu Arg Gly Thr Gly Asn Ile Gln Asp Leu Leu Thr Gln Glu
 85 90 95
 Val Pro Gly Leu Asn Phe Gln Glu Val Gly Tyr Gly Thr Ser Ile Asp
 100 105 110
 Ile Gln Gly Leu Gly Ser Lys His Ile Leu Phe Leu Ile Asp Gly Glu
 115 120 125
 Arg Ile Ala Gly Glu Asn Gly Gly Asn Ile Asp Tyr Ser Arg Ile Asn
 130 135 140
 Leu Tyr Asn Ile Asp His Ile Glu Ile Val Lys Gly Ala Ser Ser Ala
 145 150 155 160
 Leu Tyr Gly Ser Gln Ala Met Gly Gly Val Ile Asn Ile Ile Thr Arg
 165 170 175
 Lys Ala Lys Lys Lys Phe Glu Ala Ser Ala Gly Ile Arg Tyr Ala Gly
 180 185 190
 Arg Asn Gln Gln Asn Tyr Lys Asp Thr Pro Lys Asp His Ser Gln Tyr
 195 200 205
 Lys Tyr Arg Ile His Leu Asp Lys Pro Asn Leu Asn Thr Asn Leu Ser
 210 215 220
 Leu Gly Leu Asn Leu Gly Lys Phe Thr Met Asn Thr Asp Val Leu Tyr
 225 230 235 240
 Lys Ser Phe Asp Gly Tyr Gln Leu Phe Asp Lys Lys Pro Leu Val Lys
 245 250 255
 Tyr Phe Pro Ala Tyr Asn Thr Thr Ile Thr Glu Glu Leu Ser Lys Thr
 260 265 270
 Pro Thr Ser Ile Ser Gly Tyr Glu Asp Val Gln Val Ala His Lys Met
 275 280 285
 Asp Tyr Arg Phe Ser Lys Arg Leu Lys Val Gln Leu Lys Gly Ser Tyr

290		295		300
Tyr Met Leu Asn Lys	Tyr Asp Phe Gln Ala	Asp Asn Ile Phe Glu Lys		
305	310	315		320
Ser Glu Asp Tyr Thr	Tyr Gly Gly Ser Ile	Asp Tyr Thr Ile Ser Asp		
	325	330		335
Lys Ser Ser Leu Val	Ala Ser Val His Thr	Asp His Tyr Asn Arg Tyr		
	340	345		350
Asp Lys Tyr Glu Leu	Lys Ser Gly Arg Arg	Leu Glu Tyr Lys Asn Asn		
	355	360		365
Ile Ile Gln Pro Arg	Ile Val Tyr Ser Thr	Thr Ala Leu Asp Lys Gln		
	370	375		380
Thr Ile Thr Gly Gly	Leu Glu Tyr Tyr Arg	Glu Ser Leu Phe Ser Asp		
385	390	395		400
Lys Phe Glu Thr Gly	Val Lys Glu Asn Lys	Ser Gln Trp Tyr Ala Thr		
	405	410		415
Ala Phe Leu Gln Asp	Asp Trp Ser Ile Asn	Lys Gln Phe Ser Val Ile		
	420	425		430
Ala Gly Leu Arg Cys	Asp Tyr His Glu Lys	Tyr Gly Thr Asn Leu Thr		
	435	440		445
Pro Lys Ala Ser Val	Met Tyr Lys Ile Phe	Pro Phe Thr Val Arg Phe		
	450	455		460
Asn Tyr Ala Arg Gly	Tyr Arg Ser Pro Ser	Ile Lys Glu Leu Tyr Met		
465	470	475		480
Asn Trp Asp His Leu	Gly Met Phe Trp Ile	Tyr Gly Asn Ser Lys Leu		
	485	490		495
Lys Pro Glu Thr Asn	Asn Tyr Ile Ser Leu	Ser Gly Glu Tyr Val Asn		
	500	505		510
Ser Trp Ile Asn Ile	Asn Ala Asn Val Tyr	Ser Asn Trp Phe Arg Asn		
	515	520		525
Lys Ile Glu Gly Met	Trp Ser Asn Asp Gln	Thr Glu Leu His Tyr Ile		
	530	535		540
Asn Ile Gly Lys Ser	Arg Leu Ala Gly Val	Glu Thr Met Cys Lys Ile		
545	550	555		560
Gln Ile Asn Arg His	Ile Asn Val His Gly	Ala Tyr Asn Tyr Leu Tyr		
	565	570		575
Thr Ser Lys Asp Ala	Asp Gly Val Arg Leu	Ser Ser Ser Ser Pro His		
	580	585		590
Ser Gly Asn Ile Arg	Ala Glu Tyr Asn Thr	Arg Ile Pro Arg Tyr Ala		
	595	600		605
Thr Val Val Asn Leu	Ser Gly Asn Ile Met	Gly Lys Lys Lys Phe Asp		
	610	615		620
Val Leu Asp Glu Leu	Glu Ile Asp Gly Lys	Lys Val Glu Ala Tyr Tyr		
625	630	635		640
Gln Ala Lys Val Asn	Pro Tyr Cys Leu Trp	Asp Leu Thr Val Ser Gln		
	645	650		655
Tyr Ile Met Gln Asn	Leu Arg Ile Thr Ala	Gly Ile Thr Asn Leu Phe		
	660	665		670
Asp Tyr Thr Ser Asp	Arg Val Thr Phe Asn	Thr Ser Thr Ser Pro Gly		
	675	680		685
Arg Asn Tyr Phe Ile	Ala Cys Asn Tyr Thr	Leu		
	690	695		

<210> 6133

<211> 392

<212> PRT

<213> B.fragilis

<400> 6133

Phe Ile Ser Ile Ala Lys Glu Met Thr Ile Ala Phe Val Tyr Arg Asn

1	5	10	15
Phe Pro Ser Leu Gly Gly Val Glu Arg Val Ile Val Ile Leu Ala Asn			
	20	25	30
Glu Met Val Lys Gln Gly Ser Lys Val Val Ile Tyr Ser Leu Glu Gln			
	35	40	45
Gly Leu Asn Ala Tyr Ser Leu Asp Ser Ser Ile Glu Ile Ile Cys Leu			
	50	55	60
Pro Gln Lys Lys Ile Leu Glu Ser Lys Glu Asn Val Asn Phe Leu Ile			
65	70	75	80
Thr His Leu Cys Glu Tyr Lys Ile Glu Leu Leu Phe Asn His Asp Ser			
	85	90	95
Val Lys Asp Ser Ile Glu Leu Cys Arg Arg Val Lys Lys Lys Ile Asn			
	100	105	110
Ile Pro Val Val Thr Leu His His Gly Gln Ile Tyr Leu Pro Trp Lys			
	115	120	125
Ser Gln Trp Ala Ile Leu Lys Asp Lys Tyr Ser Leu Arg Val Cys Leu			
	130	135	140
Lys Lys Ile Phe Phe Pro Phe Phe Val Leu Ala Thr Lys Val Arg Asn			
145	150	155	160
Asn Leu His His Arg Tyr Asn Ile Lys Val Cys Asp Val Tyr Val Phe			
	165	170	175
Leu Ala Glu Cys Tyr Lys Asp Gln Leu Gly Ile Asp Lys Lys Val Met			
	180	185	190
Ala Ile Pro Asn Pro Leu Ser Ser Phe Phe Phe Glu Asp Asp Cys			
	195	200	205
Tyr Gln Ser Lys Cys Asn Thr Val Val Met Val Gly Arg Ile Ser Asp			
	210	215	220
Phe His Lys Arg Ile Ile Leu Ala Leu Arg Ile Trp Lys Glu Ile Glu			
225	230	235	240
Asn Cys Glu Gln Phe Asp Ser Trp Asn Phe Asp Ile Ala Gly Asp Gly			
	245	250	255
Pro Asp Phe Tyr Leu Ile Gln Asp Thr Ile Cys Ser Leu Gly Leu Lys			
	260	265	270
Arg Val Arg Leu Leu Gly Gln Val Asn Ser Phe Asp Val Tyr Lys Lys			
	275	280	285
Ala Lys Ile Leu Leu Leu Thr Ser Ala Phe Glu Gly Phe Pro Leu Val			
	290	295	300
Leu Asn Glu Ala Lys Gln Cys Ala Cys Val Pro Ile Ala Met Asp Ser			
305	310	315	320
Phe Glu Ser Val His Glu Leu Ile Asn Asn Gly Glu Asp Gly Leu Ile			
	325	330	335
Ile Ser Asn Asn Asp Leu Asn Thr Phe Leu Glu Gly Leu Lys Tyr Leu			
	340	345	350
Met Ser His Asn Asp Ile Leu Arg Glu Met Ser Lys Lys Ser Val Leu			
	355	360	365
Asn Thr Arg Lys Tyr Glu Val Ser Arg Leu Cys Asn Ile Trp Met Asp			
	370	375	380
Leu Phe Lys Ser Ile Val Asn Asn			
385	390		

<210> 6134

<211> 262

<212> PRT

<213> B.fragilis

<400> 6134

Thr Leu Tyr Ile Ser Asn Gln Met Gln Leu Thr Leu Met Glu Gln Lys
1 5 10 15
Ile Ser Lys Tyr Ser Thr Ala Thr Ile Val Ser Leu Leu Cys Leu Leu

Variable	Unit	Mean	Standard deviation	Minimum	Maximum
Age	Years	35.2	12.5	18	65
Gender	Male/Female	52/48	-	-	-
Education	Years	12.8	2.1	8	16
Income	\$/month	1,200	300	600	2,400
Health	Good/Bad	70/30	-	-	-
Marital status	Married/Single	65/35	-	-	-
Occupation	Various	-	-	-	-
Religion	Various	-	-	-	-
Political affiliation	Various	-	-	-	-
Smoking	Yes/No	30/70	-	-	-
Alcohol consumption	Yes/No	25/75	-	-	-
Exercise	Yes/No	40/60	-	-	-
Diet	Vegetarian/Non-vegetarian	35/65	-	-	-
Stress level	Low/High	45/55	-	-	-
Sleep pattern	Regular/Irregular	50/50	-	-	-
Family size	0-4 children	2.5	1.2	0	4
Home ownership	Own/Rent	60/40	-	-	-
Commute time	Minutes	25	15	10	45
Work hours	Hours/week	40	5	30	50
Job satisfaction	1-5 scale	3.2	0.8	1	5
Life satisfaction	1-10 scale	6.5	1.5	3	10
Healthcare usage	Times/year	2.1	1.0	0	4
Insurance status	Has/Does not have	75/25	-	-	-
Financial literacy	Score	7.8	1.2	5	10
Environmental awareness	1-5 scale	3.5	0.9	2	5
Volunteering	Hours/month	1.5	1.0	0	3
Community involvement	Yes/No	55/45	-	-	-
Trust in government	1-5 scale	3.0	0.8	1	5
Confidence in neighbors	1-5 scale	3.8	0.9	2	5
Perceived safety	1-5 scale	3.5	0.8	2	5
Quality of life	1-10 scale	7.0	1.5	4	10
Overall well-being	1-10 scale	6.8	1.4	4	10

<400> 6135

Asn	Pro	Asn	Ile	His	Leu	Lys	Ser	Ser	Thr	Ile	Met	Asn	Val	Glu	Pro
1				5					10					15	
Met	Tyr	Leu	Thr	Ile	Phe	Leu	Ile	Ala	Gly	Gly	Ile	Ile	Phe	Leu	Val
			20					25					30		
Leu	Phe	Phe	His	Tyr	Val	Pro	Phe	Phe	Leu	Trp	Leu	Ser	Ala	Lys	Val
		35					40					45			
Ser	Gly	Val	Asn	Ile	Ser	Leu	Val	Gln	Leu	Phe	Leu	Met	Arg	Ile	Arg
	50					55					60				
Asn	Val	Pro	Pro	Tyr	Ile	Val	Pro	Gly	Met	Ile	Glu	Ala	His	Lys	
65				70					75					80	
Ala	Gly	Leu	Ser	Asn	Ile	Thr	Arg	Asp	Glu	Leu	Glu	Ala	His	Tyr	Leu
				85					90					95	
Ala	Gly	Gly	His	Val	Glu	Arg	Val	Val	His	Ala	Leu	Val	Ser	Ala	Ser
			100					105					110		
Lys	Ala	Asn	Ile	Glu	Leu	Pro	Phe	Gln	Ile	Ala	Thr	Ala	Ile	Asp	Leu
		115					120					125			
Ala	Gly	Arg	Asp	Val	Phe	Glu	Ala	Val	Gln	Met	Ser	Val	Asn	Pro	Lys
	130					135					140				
Val	Ile	Asp	Thr	Pro	Pro	Val	Thr	Ala	Val	Ala	Lys	Asp	Gly	Ile	Gln
145				150						155				160	
Leu	Ile	Ala	Lys	Ala	Arg	Val	Thr	Val	Arg	Ala	Asn	Ile	Arg	Gln	Leu

Symbol	Definition	Symbol	Definition
\mathbf{A}	Matrix	$\mathbf{A}^{(n)}$	Matrix
\mathbf{B}	Matrix	$\mathbf{B}^{(n)}$	Matrix
\mathbf{C}	Matrix	$\mathbf{C}^{(n)}$	Matrix
\mathbf{D}	Matrix	$\mathbf{D}^{(n)}$	Matrix
\mathbf{E}	Matrix	$\mathbf{E}^{(n)}$	Matrix
\mathbf{F}	Matrix	$\mathbf{F}^{(n)}$	Matrix
\mathbf{G}	Matrix	$\mathbf{G}^{(n)}$	Matrix
\mathbf{H}	Matrix	$\mathbf{H}^{(n)}$	Matrix
\mathbf{I}	Matrix	$\mathbf{I}^{(n)}$	Matrix
\mathbf{J}	Matrix	$\mathbf{J}^{(n)}$	Matrix
\mathbf{K}	Matrix	$\mathbf{K}^{(n)}$	Matrix
\mathbf{L}	Matrix	$\mathbf{L}^{(n)}$	Matrix
\mathbf{M}	Matrix	$\mathbf{M}^{(n)}$	Matrix
\mathbf{N}	Matrix	$\mathbf{N}^{(n)}$	Matrix
\mathbf{O}	Matrix	$\mathbf{O}^{(n)}$	Matrix
\mathbf{P}	Matrix	$\mathbf{P}^{(n)}$	Matrix
\mathbf{Q}	Matrix	$\mathbf{Q}^{(n)}$	Matrix
\mathbf{R}	Matrix	$\mathbf{R}^{(n)}$	Matrix
\mathbf{S}	Matrix	$\mathbf{S}^{(n)}$	Matrix
\mathbf{T}	Matrix	$\mathbf{T}^{(n)}$	Matrix
\mathbf{U}	Matrix	$\mathbf{U}^{(n)}$	Matrix
\mathbf{V}	Matrix	$\mathbf{V}^{(n)}$	Matrix
\mathbf{W}	Matrix	$\mathbf{W}^{(n)}$	Matrix
\mathbf{X}	Matrix	$\mathbf{X}^{(n)}$	Matrix
\mathbf{Y}	Matrix	$\mathbf{Y}^{(n)}$	Matrix
\mathbf{Z}	Matrix	$\mathbf{Z}^{(n)}$	Matrix

<400> 6136

Ser	Ala	Asp	Ile	Pro	Leu	Ile	Leu	Arg	Arg	Leu	Lys	Thr	Cys	Leu	Cys
1				5					10					15	
Trp	Ala	Thr	Lys	Pro	Ala	Thr	Ala	Ser	Leu	Ser	Val	Val	Gly	Leu	Glu
			20					25					30		
Ser	Leu	Gln	Arg	Ser	Asp	Lys	Ser	Met	Leu	Arg	Gln	Gln	Ser	Asn	Ser
		35					40					45			
Leu	Leu	Asn	Lys	Ser	Leu	Ser	Ile	Thr	Ile	Val	Phe	Gly	Ala	Ile	Val
	50					55					60				
Met	Leu	Leu	Leu	Phe	Ser	Ser	Cys	Gly	Gly	Arg	Asn	Lys	Ala	Met	Ala
65				70						75					80
Asp	Ala	Ile	Thr	Glu	Arg	Asp	Ser	Leu	Pro	Val	Met	Asp	Thr	Arg	Gly
				85					90					95	
Val	Thr	Thr	Leu	Ile	Ser	Asp	Ser	Gly	Val	Thr	Arg	Tyr	Arg	Val	Asn
			100					105					110		
Thr	Glu	Glu	Trp	Leu	Ile	Phe	Asp	Lys	Lys	Lys	Pro	Ser	Tyr	Trp	Ala
		115					120					125			
Phe	Glu	Lys	Gly	Ile	Tyr	Leu	Glu	Gln	Phe	Asp	Ser	Leu	Phe	His	Ile
	130					135					140				
Asp	Ala	Ser	Ile	Lys	Ala	Asp	Thr	Ala	Tyr	Tyr	Tyr	Asp	Arg	Asp	Arg
145				150						155					160
Leu	Trp	Lys	Leu	Ile	Gly	Asn	Val	Asp	Ile	Lys	Ser	Leu	Lys	Gly	Asp
				165					170					175	
His	Val	Thr	Thr	Glu	Leu	Leu	Tyr	Trp	Asn	Glu	Ala	Thr	Lys	Lys	Val
			180					185					190		
Tyr	Thr	Asp	Lys	Phe	Val	Arg	Met	Glu	Lys	Pro	Asp	Gln	Ile	Met	Thr
		195					200					205			
Gly	Tyr	Gly	Phe	Glu	Ser	Asp	Asp	Gln	Phe	Met	Lys	Pro	Val	Val	His
	210					215					220				
Asn	Ile	Ser	Gly	Ile	Val	Tyr	Ile	Asp	Glu	Asp	Ala	Glu	Lys	Ala	Lys

225
Thr Asp Ser Val Asn
245

235

240

<210> 6137
<211> 248
<212> PRT
<213> B.fragilis

<400> 6137
Ile Thr Asp Ile Pro Met Lys Asn Ile Phe Thr Leu Leu Ile Leu Ser
1 5 10 15
Val Cys Phe Leu Cys Ala Asn Ile Ser Gly Arg Ala Gln Asn Lys Phe
20 25 30
Ser Asp Met Glu Val Asn His Val Arg Val Ala Thr Pro Gly Leu Phe
35 40 45
Ser Lys Glu Asn Cys Val Met Leu Asp Leu Lys Ser Leu Ser Arg Asn
50 55 60
Tyr Ser Phe Pro Leu Pro Gly Gly Lys Val Ile Ser Gly Tyr Gly Thr
65 70 75 80
Arg Gly Gly His Ser Gly Asp Asp Ile Lys Thr Cys Ala Arg Asp Thr
85 90 95
Ile Arg Ala Ala Phe Asp Gly Val Val Arg Met Ala Lys Pro Tyr Gly
100 105 110
Ala Tyr Gly Asn Val Ile Val Ile Arg His Pro Asn Gly Leu Glu Thr
115 120 125
Val Tyr Ser His Asn Val Lys Asn Leu Val Lys Ser Gly Asp Val Val
130 135 140
Lys Ala Gly Met Ala Ile Gly Leu Thr Gly Arg Thr Gly Arg Ala Thr
145 150 155 160
Thr Glu His Leu His Phe Glu Thr Arg Ile Asn Gly Gln His Phe Asn
165 170 175
Pro Gly Leu Ile Phe Asp Met Lys Lys Gly Thr Leu Arg Thr Asp Tyr
180 185 190
Leu Gln Cys Thr Lys Lys Gly Lys Gly Ile Val Val Lys Ala Leu Lys
195 200 205
Ser Glu Lys Val Leu Pro Lys Tyr Lys Thr Leu Ser Pro Phe Leu Tyr
210 215 220
Glu Leu Pro Gly Ile Lys Lys Pro Val Trp Asn Ile Pro Ala Leu Ala
225 230 235 240
Arg Ser Ala Ala Tyr Ser Gly Leu
245

<210> 6138
<211> 67
<212> PRT
<213> B.fragilis

<400> 6138
Ser Val Cys Ile Pro Lys Ser Ser Leu Tyr Phe Thr Ile Lys Ser Ala
1 5 10 15
Val Arg Ser Ser Asp Cys Gly Ile Ser Pro Leu Ser Ser Ser Trp Gln
20 25 30
Leu Gln Ser Asn Ala Asn Asn Ala Asn Lys Thr Ile Glu Tyr Leu Cys
35 40 45
Lys Leu Ile Val Pro Tyr Asn Leu Leu Val Leu Asn Met Ile Leu Leu
50 55 60
Pro Asn Ile
65

<210> 6139
 <211> 385
 <212> PRT
 <213> B.fragilis

<400> 6139

Tyr Phe Ile Phe Tyr Leu Ile Ile Leu Met Tyr Asn Leu Phe Ile Val
 1 5 10 15
 Val Asn Val Asp Trp Phe Phe Leu Ser His Arg Lys Asp Ile Ala Leu
 20 25 30
 Thr Ala Gln Lys Ser Gly Tyr Asn Val Thr Ile Val Thr Lys Asp Thr
 35 40 45
 Gly Lys Lys Lys Asp Ile Glu Ser Leu Gly Leu Lys Val Ile Asp Leu
 50 55 60
 Pro Met Asn Arg Ser Gly Gln Asn Leu Leu Glu Glu Leu His Thr Cys
 65 70 75 80
 Trp Phe Leu Tyr His Leu Tyr Arg Arg Glu Asn Pro Asp Ile Val His
 85 90 95
 His Val Gly Leu Lys Thr Ile Leu Trp Gly Thr Leu Ala Ala Lys Leu
 100 105 110
 Ala Asn Ile His Gly Ile Val Asn Ala Val Ser Gly Leu Gly Ile Phe
 115 120 125
 Phe Ser Glu Gly Asn Arg Ser Ile Ile Ser Lys Leu Leu Pro Lys Val
 130 135 140
 Leu Arg Phe Ser His Tyr Arg Asn Asn Val Ala Val Ile Phe Gln Asn
 145 150 155 160
 Asp Glu Asp Lys Ser Leu Phe Leu Lys His Gln Ile Ile Lys Glu Ser
 165 170 175
 Gln Ala Tyr Lys Ile Lys Gly Ser Gly Val Asp Leu Lys Gln Tyr Asn
 180 185 190
 Tyr Thr Pro Glu Pro Glu Glu Gly Lys Ile Lys Val Leu Leu Thr Ala
 195 200 205
 Arg Met Ile Val Glu Lys Gly Ile Phe Ile Leu Thr Asp Ser Ala Ile
 210 215 220
 Lys Leu Arg Lys Gln Tyr Gln Gly Lys Val Gln Phe Leu Leu Cys Gly
 225 230 235 240
 Gly Leu Asp Asp Asn Pro Met Ala Ile Lys Glu Ser Glu Leu Gln Ala
 245 250 255
 Val Cys Asp Gly Lys Tyr Ile Lys Trp Leu Gly Tyr Arg Thr Asp Val
 260 265 270
 Leu Asp Leu Leu Lys Asp Cys His Ile Val Ala Phe Pro Ser Tyr Tyr
 275 280 285
 Lys Glu Gly Leu Pro Lys Ser Leu Ile Glu Ala Thr Ala Ile Gly Arg
 290 295 300
 Pro Ile Ile Thr Thr Asn Ser Ile Gly Cys Lys Glu Thr Val Ile Asp
 305 310 315 320
 Gly Tyr Asn Gly Tyr Leu Ile Pro Ile Lys Asp Ser Asp Met Leu Ala
 325 330 335
 Ser Arg Leu Ser Phe Leu Phe Glu Asn Lys Asp Val Arg Gln Ser Met
 340 345 350
 Gly Arg Asn Ser Arg Lys Leu Ala Glu Lys Asp Phe Ser Ile Asp Asp
 355 360 365
 Val Ile Lys Lys His Leu Asp Ile Tyr Arg Thr Leu Val Ile Gly Thr
 370 375 380
 Leu
 385

<210> 6140

<211> 473
 <212> PRT
 <213> B.fragilis

<400> 6140

Trp	Ser	Ile	Phe	Arg	Ile	Thr	Leu	Leu	Thr	Val	Gly	Glu	Arg	Thr	Ile
1				5					10					15	
Leu	Ser	Leu	Arg	Phe	Arg	Val	Glu	Thr	Leu	Thr	Ala	Asp	Asn	Ala	Phe
			20				25						30		
Ile	Lys	Arg	Tyr	Trp	Glu	Thr	Ser	Tyr	Lys	Arg	Ile	Gly	Tyr	Cys	Asn
		35					40					45			
Arg	Phe	Leu	Val	Gly	Ile	Gln	Asn	Asn	Ser	Glu	Ser	Glu	Lys	Lys	Thr
	50					55					60				
Arg	Met	Ile	Ala	Glu	Ala	Arg	Phe	Leu	Arg	Ala	Thr	Gln	Tyr	Phe	Tyr
65					70					75					80
Leu	Ala	Ser	Tyr	Phe	Lys	Asn	Val	Pro	Leu	Val	Glu	Asn	Val	Leu	Thr
				85					90					95	
Gly	Glu	Glu	Ala	Asn	Asn	Val	Thr	Lys	Thr	Ser	Gln	Ala	Asp	Ile	Leu
			100					105					110		
Lys	Trp	Cys	Val	Thr	Glu	Phe	Thr	Ala	Ala	Ala	Ala	Asp	Leu	Pro	Arg
		115					120					125			
Phe	Ser	Ala	Ile	Pro	Ala	Gly	Glu	Ala	Gly	Arg	Ala	Cys	Lys	Gln	Ala
		130				135					140				
Ala	Leu	Ala	Phe	Leu	Gly	Arg	Thr	Cys	Met	Leu	Gln	Lys	Asp	Trp	Lys
145					150					155					160
Ser	Gly	Ala	Lys	Ala	Phe	His	Asp	Ile	Met	Glu	Leu	Gly	Asp	Asn	Ala
				165					170					175	
Ile	Asn	Ala	Asn	Tyr	Gln	Glu	Leu	Phe	Tyr	Pro	Ser	Thr	Gly	Thr	Ser
			180					185					190		
Asn	Lys	Glu	Asn	Ile	Phe	Tyr	Ile	Gln	Tyr	Leu	Glu	Asn	Tyr	Leu	Gly
		195					200					205			
Thr	Gly	Leu	Pro	Gln	His	Ala	Leu	Ser	Ala	Lys	Asp	Gly	Gly	Trp	Ser
		210				215					220				
Leu	Val	Asn	Pro	Ala	Ala	Asp	Leu	Tyr	Glu	Ser	Tyr	Glu	Phe	Lys	Asp
225					230					235					240
Gly	Thr	Pro	Phe	Ser	Tyr	Asp	Asp	Pro	Arg	Tyr	Asp	Pro	Ser	Asn	Leu
				245					250					255	
Gly	Lys	Asp	Arg	Asp	Pro	Arg	Leu	Asp	Tyr	Thr	Ile	Tyr	Tyr	Asn	Gly
			260					265					270		
Ala	Ile	Phe	Met	Gly	Thr	Glu	Tyr	Lys	Met	Ser	Pro	Asp	Tyr	Ser	Ala
		275					280					285			
Ala	Lys	Lys	Glu	Lys	Leu	Asp	Tyr	Thr	Ser	Glu	Ala	Ser	Arg	Thr	Gly
		290				295					300				
Phe	Met	Met	Arg	Lys	Tyr	Phe	Glu	Glu	Ser	Thr	Pro	Ile	Asn	Asp	Val
305					310					315					320
Gln	Ser	Ala	Asn	Gly	Leu	Thr	Pro	Val	Ile	Arg	Tyr	Ala	Glu	Val	Leu
				325					330					335	
Leu	Gly	Tyr	Leu	Glu	Cys	Leu	Val	Glu	Asp	Asn	Gln	Thr	Ile	Thr	Gln
			340					345					350		
Gly	Ile	Leu	Asp	Glu	Thr	Ile	Asn	Ala	Val	Arg	Gly	Arg	Ala	Ser	Val
		355					360					365			
Asn	Met	Pro	Pro	Val	Thr	Glu	Val	Thr	Pro	Ala	Lys	Leu	Arg	Glu	Ile
		370				375					380				
Val	Arg	His	Glu	Arg	Arg	Ile	Glu	Leu	Ala	Met	Glu	Gly	Ile	Arg	Tyr
385					390					395					400
Trp	Asp	Ile	Met	Arg	Trp	Gly	Ile	Ala	His	Glu	Val	Leu	Ser	Gln	Lys
				405					410					415	
Ile	Trp	Gly	Ala	Pro	Tyr	Pro	Gly	Ser	Thr	Gln	Tyr	Ala	Thr	Thr	Thr
			420					425					430		

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500

Lys Glu Val Asp Pro Thr Gly Asn Tyr Arg Trp Tyr Val Gly Lys Arg
 435 440 445
 Ala Phe Arg Asn Pro Thr Asp Tyr Thr Trp Pro Ile Pro Gln Ser Glu
 450 455 460
 Gln Asn Ile Asn Pro Asn Leu Arg Asp
 465 470

<210> 6141
 <211> 955
 <212> PRT
 <213> B.fragilis

<400> 6141

Asn Gln Leu Met Leu Lys Ser Lys Tyr Leu Phe Leu Ser Leu Ile Cys
 1 5 10 15
 Leu Leu Thr Ser Phe Arg Leu His Ala Gln Phe Met Asp Tyr Gly Ser
 20 25 30
 Asp Pro Ala Lys Phe Lys Trp Asn Ile Ala Arg Leu Pro His Tyr Asn
 35 40 45
 Leu Val Tyr Pro Gln Gly Asn Asp Ser Met Ala Tyr Arg Tyr Ala Leu
 50 55 60
 Phe Leu Glu Asn Val Tyr Pro His Met Ser Lys Thr Ile Gly Lys Pro
 65 70 75 80
 Ile Lys Ala Lys Phe Pro Val Ile Leu His Pro Gly Asn Met Gln Ser
 85 90 95
 Asn Gly Met Val Ser Trp Ala Pro Arg Arg Met Glu Leu Ile Thr Thr
 100 105 110
 Pro Ser Ser Asp Leu Asn Asn Gln Ser Trp Asp Lys His Leu Val Leu
 115 120 125
 His Glu Ser Arg His Val Phe Gln Thr Gly Lys Val Met His Gly Ile
 130 135 140
 Phe Lys Pro Leu Tyr Tyr Ile Ile Gly Glu Gln Ala Ala Gly Val Ala
 145 150 155 160
 Ser Phe Phe Leu Pro Val Trp Phe Leu Glu Gly Asp Ala Val Ser Thr
 165 170 175
 Glu Thr Ala Met Ser Asn Gly Gly Arg Gly Arg Leu Pro Glu Phe Asn
 180 185 190
 Met Val Tyr Arg Ala Gln Met Leu Gly Gly Lys Lys Asn Tyr Ser Phe
 195 200 205
 Asp Lys Trp Leu Met Gly Ser Tyr Lys Asn Tyr Thr Gly Thr Tyr Tyr
 210 215 220
 Ala Leu Gly Phe Asp Met Thr Ser Tyr Ala Arg Gln Arg Tyr Gly Ala
 225 230 235 240
 Asp Ile Trp Asp Lys Ser Thr Ser Arg Tyr Ile Arg Asn Leu Leu Phe
 245 250 255
 Glu Gly Ser Phe Lys His Tyr Thr Gly Ser Ser Phe Lys Arg Leu Gln
 260 265 270
 His Asp Thr Phe Asp Phe Leu Arg Ala Glu Trp Glu Lys Gln Asp Thr
 275 280 285
 Cys Thr Gln Ser Pro Gln Tyr Leu Ser Pro Thr Lys Glu Thr Tyr Thr
 290 295 300
 Ser Tyr Arg Tyr Pro Gln Pro Ile Asn Asp Ser Ile Val Ile Thr Val
 305 310 315 320
 Lys Ser Gly Leu Lys Asp Ile Asn Ser Leu Val Ile Ile Asn Asn Gly
 325 330 335
 Arg Glu Lys His Leu Asp Tyr Ile Gly Ser Ile Asn Ser Arg Leu Ser
 340 345 350
 Tyr Arg Asn Gly Arg Val Tyr Trp Ser Glu Leu Val Pro Gly Leu Arg
 355 360 365

Trp	Thr	His	Gln	Asn	Tyr	Ser	Ile	Ile	Lys	Tyr	Tyr	Asp	Leu	Asp	Lys
	370					375					380				
Lys	Asn	Ile	Lys	Ala	Leu	Thr	Pro	Arg	Gln	Arg	Tyr	Leu	Ser	Pro	Ala
385					390					395					400
Ile	Asp	Glu	Gln	Gly	Gln	His	Ile	Ala	Val	Ser	Arg	Pro	Thr	Val	Glu
				405					410					415	
Gly	Lys	Asn	Gln	Leu	Val	Leu	Ile	Gln	Ala	Glu	Lys	Gly	Asn	Glu	Leu
			420					425					430		
Ala	Ala	Phe	Asp	Val	Pro	Asp	Asn	Ala	Phe	Ile	Lys	Glu	Leu	Thr	Phe
		435					440					445			
Ala	Gly	Gly	Asp	Thr	Ile	Ile	Ser	Ile	Ala	Val	Ala	Asp	Ser	Gly	Ile
	450					455					460				
Arg	Leu	Leu	Gln	Phe	Asn	Phe	Gly	Asn	Gly	Ile	Trp	Lys	Glu	Leu	Leu
465					470					475					480
Lys	Thr	Ala	Ser	Ala	Asn	Ile	Thr	Ser	Pro	Val	Trp	Lys	Asp	Gly	Lys
				485					490					495	
Ile	Phe	Phe	Glu	Ser	Gly	Ala	Asn	Gly	Ile	Asn	Asn	Ile	Tyr	Ser	Leu
			500					505					510		
Asn	Pro	Ala	Asp	Gly	Gln	Val	Arg	Arg	Met	Thr	Ala	Ala	Arg	Phe	Gly
	515						520					525			
Ala	Phe	Asp	Pro	Ser	Phe	Gly	Ser	Ser	Asp	Gly	Arg	Leu	Phe	Phe	Ser
	530					535					540				
Asp	Tyr	Gln	Ala	Asp	Gly	Tyr	Arg	Ile	Ala	Ser	Leu	Pro	Thr	Asp	Ser
545					550					555					560
Met	Leu	Phe	Glu	Lys	Ala	Asp	Leu	Asn	Arg	Pro	Ala	Ser	Met	Pro	Phe
				565					570					575	
Val	Glu	Thr	Leu	Ala	Ala	Gln	Glu	Gln	Phe	Asn	Leu	Asp	Ser	Ala	Arg
			580					585					590		
Leu	Thr	Ser	Val	Asp	Phe	Asn	Pro	Lys	Arg	Tyr	Arg	Lys	Ala	Glu	His
			595				600						605		
Thr	Phe	Lys	Ile	His	Ser	Trp	Ala	Pro	Phe	Tyr	Tyr	Asp	Val	Ala	Glu
	610					615						620			
Ala	Met	Asn	Ser	Gly	Ala	Ser	Asp	Leu	Ser	Thr	Ile	Val	Lys	Pro	Gly
625					630					635					640
Ala	Thr	Leu	Met	Ser	Gln	Asn	Thr	Leu	Asn	Thr	Ala	Ile	Met	Gln	Ala
				645					650					655	
Gly	Trp	Tyr	Ile	Asp	Lys	Gly	Tyr	His	His	Gly	Lys	Leu	Ser	Phe	Ile
			660					665						670	
Tyr	Gln	Gly	Trp	Phe	Pro	Val	Ile	Asn	Leu	Ser	Val	Asp	Tyr	Gly	Asp
			675				680					685			
Lys	Ala	Phe	Asn	Val	Asp	Trp	Thr	Gln	Asn	Asp	Lys	Gly	Gln	Asp	Ile
	690					695					700				
Thr	Gln	Gly	His	Tyr	Thr	Gln	Arg	Asn	Leu	Val	Glu	Ala	Glu	Ala	Arg
705					710					715					720
Val	Tyr	Leu	Pro	Phe	Asn	Leu	Thr	His	Asn	Gln	Arg	Ile	Arg	Gly	Ile
				725					730					735	
Gln	Pro	Ala	Leu	Thr	Tyr	Tyr	Phe	Thr	Asn	Asn	Lys	Tyr	Gln	Glu	Tyr
			740					745					750		
His	Ser	Arg	Lys	Phe	His	Asn	Phe	Gln	Tyr	Ile	Leu	Pro	Glu	Ile	Leu
	755						760						765		
Phe	Tyr	Asp	Tyr	Arg	Arg	Lys	Ala	Gln	Arg	Asp	Ile	Leu	Pro	Arg	Thr
	770					775					780				
Gly	Tyr	Gln	Leu	Arg	Leu	Gln	Tyr	Leu	Lys	Thr	Pro	Phe	Asn	Ser	Glu
785					790					795					800
Asn	Tyr	Gly	Ser	Leu	Tyr	Ala	Ala	Arg	Leu	Thr	Thr	Tyr	Trp	Pro	Gly
			805					810						815	
Ile	Ile	Arg	Asn	His	Gly	Leu	Met	Ile	Arg	Val	Gly	Tyr	Gln	Tyr	Gln
			820					825					830		
Asp	Leu	Asp	Asn	Lys	Ala	Leu	Tyr	Leu	Pro	Lys	His	Leu	Leu	Glu	Lys

835	840	845
Pro Arg Gly Tyr His Phe Gln Tyr Gln Thr Arg Gln Gln Trp Ala Phe		
850	855	860
Lys Thr Asp Tyr Ala Leu Pro Leu Leu Ser Pro Asp Trp Ser Ile Gly		
865	870	875
Ser Leu Ile Tyr Ile Arg Arg Leu Arg Ala Asn Leu Phe Tyr Asp Leu		
	885	890
Ser Arg Asn Gln Ala Ser Ser Lys Ser Arg Trp Ser Asn Gln Ser Ser		
	900	905
Tyr Gly Gly Asp Leu Ile Phe Asp Trp Asn Val Leu Arg Met Ser Tyr		
	915	920
Pro Leu Thr Thr Gly Ile Arg Leu Ile Gln Pro Ile Asp Tyr Gly Lys		
	930	935
Phe Gln Val Glu Ala Leu Phe Ser Ile Ser Phe		940
945	950	955

<210> 6142
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 6142

Leu Phe Ile Met Asn Gly Leu Tyr Lys Arg Ser Met Ile Asp Leu Ala		
1	5	10
Leu Ser Asp Ser Thr Pro Thr Thr Thr Arg Ser Gly Phe Met Lys Ser		
	20	25
Ser Thr Ala Ser Pro Ser Phe Arg Asn Ser Gly Leu Glu Ala Thr Ser		
	35	40
Asn Ser Arg Phe Lys Pro Arg Leu Ser Asn Ser Pro Arg Ile Val Ala		
	50	55
Phe Thr Cys Cys Ala Val Pro Thr Gly Thr Val Leu Phe Val Thr Thr		
65	70	75
Ser Thr		80

<210> 6143
 <211> 506
 <212> PRT
 <213> B.fragilis

<400> 6143

Lys Phe Thr Met Lys Ile Phe Pro Ser Ser Ser Ile Lys Lys Leu Asp		
1	5	10
Ala Tyr Thr Ile Glu His Glu Pro Ile Ala Ser Ile Asp Leu Met Glu		
	20	25
Arg Ala Ala Gln Ala Leu Thr Lys Ala Ile Thr Glu Arg Trp Asp Ile		
	35	40
Thr Thr Pro Val Thr Val Phe Ala Gly Pro Gly Asn Asn Gly Gly Asp		
	50	55
Ala Leu Ala Val Ala Arg Met Leu Ala Glu Lys Glu Tyr Lys Val Glu		
65	70	75
Ala Tyr Leu Phe Asn Pro Lys Gly Glu Leu Ser Ala Asp Cys Gln Thr		
	85	90
Asn Lys Glu Leu Val Glu Thr Met Asp Asn Val Lys Phe Ser Glu Val		
	100	105
Ser Thr Gln Phe Val Pro Pro Ala Leu Thr Met Asp His Leu Val Val		
	115	120
Asp Gly Leu Phe Gly Ser Gly Leu Asn Lys Pro Leu Ser Gly Gly Phe		
130	135	140

Ala Ala Val Val Lys Tyr Ile Asn Ala Ser Pro Ala Thr Val Val Ala
 145 150 155 160
 Ile Asp Ile Pro Ser Gly Leu Met Gly Glu Glu Asn Thr Phe Asn Val
 165 170 175
 Lys Ala Asn Ile Ile Arg Ala Gln Leu Thr Leu Ser Leu Gln Leu Pro
 180 185 190
 Lys Leu Ala Phe Leu Phe Ala Glu Asn Ser Glu Phe Val Gly Glu Trp
 195 200 205
 Lys Leu Leu Asp Ile Asn Leu Ser Arg Glu Ala Ile Glu Glu Thr Glu
 210 215 220
 Ser Asn Tyr Ala Leu Leu Glu Ala Glu Glu Ile His Ala Leu Ile Lys
 225 230 235 240
 Pro Arg Asn Thr Phe Ser His Lys Gly Asn Phe Gly His Ala Leu Leu
 245 250 255
 Ile Ala Gly Ser Tyr Gly Met Ala Gly Ala Ser Ile Leu Ala Ala Arg
 260 265 270
 Ala Cys Met Arg Ser Gly Val Gly Leu Leu Thr Val His Ala Pro Ile
 275 280 285
 Arg Asn Asn Asp Ile Leu Gln Ile Ser Val Pro Glu Ala Ile Ile Glu
 290 295 300
 Ser Asp Ala Ser Asp Thr Tyr Phe Ala Cys Pro Thr Asp Thr Asp Asp
 305 310 315 320
 Tyr Gln Ala Val Gly Ile Gly Pro Gly Ile Gly Arg Ser Glu Glu Thr
 325 330 335
 Glu Ala Ala Leu Leu Glu Gln Leu Ser Gly Cys Gln Thr Pro Leu Val
 340 345 350
 Leu Asp Ala Asp Ala Leu Asn Ile Leu Ala Asn His Arg His Ala Leu
 355 360 365
 Thr Thr Leu Pro Lys Gly Ser Ile Leu Thr Pro His Pro Lys Glu Leu
 370 375 380
 Glu Arg Met Val Gly Lys Cys Gln Asn Ser Tyr Glu Arg Leu Met Lys
 385 390 395 400
 Ala Cys Glu Leu Ala Arg Thr Ala Lys Val His Ile Ile Leu Lys Gly
 405 410 415
 Ala Tyr Ser Ala Ile Ile Thr Pro Ser Gly Lys Cys Tyr Phe Asn Ser
 420 425 430
 Thr Gly Asn Pro Gly Met Ala Thr Ala Gly Ser Gly Asp Val Leu Thr
 435 440 445
 Gly Val Val Leu Ala Leu Leu Ala Gln Gly Tyr Pro Ala Glu Glu Ala
 450 455 460
 Ala Lys Ile Gly Thr Tyr Val His Gly Leu Ala Gly Asp Phe Ala Arg
 465 470 475 480
 Lys Lys Gln Gly Val Ile Ser Met Thr Ala Gly Asp Ile Ile Ser Asn
 485 490 495
 Leu Pro Leu Ala Trp Arg Leu Val Ser Glu
 500 505

<210> 6144

<211> 717

<212> PRT

<213> B.fragilis

<400> 6144

Ile Val Leu Ile Lys Met Ala Thr Leu Gln Asn Ile Arg Ser Lys Gly
 1 5 10 15
 Pro Leu Leu Val Ile Val Ile Gly Leu Ala Leu Phe Ala Phe Ile Ala
 20 25 30
 Gly Asp Ala Trp Lys Val Leu Gln Pro His Gln Ser His Asp Val Gly
 35 40 45

Glu	Val	Asn	Gly	Glu	Thr	Leu	Ser	Ala	Gln	Asp	Tyr	Gln	Asn	Met	Val
50						55					60				
Glu	Glu	Tyr	Thr	Glu	Val	Ile	Lys	Phe	Ser	Ser	Gly	Met	Ser	Ser	Leu
65					70					75					80
Asn	Asp	Glu	Gln	Thr	Asn	Gln	Val	Lys	Asp	Glu	Val	Trp	Arg	Ser	Tyr
				85					90					95	
Val	Asn	Asn	Lys	Leu	Ile	Glu	Lys	Glu	Ala	Lys	Lys	Leu	Gly	Ile	Thr
			100					105					110		
Val	Ser	Lys	Ala	Glu	Ile	Gln	Ser	Ile	Ile	Asn	Glu	Gly	Val	Asn	Pro
		115					120					125			
Leu	Leu	Gln	Gln	Thr	Pro	Phe	Arg	Asn	Pro	Gln	Thr	Gly	Ala	Phe	Asp
		130				135					140				
Lys	Asp	Met	Leu	Lys	Lys	Phe	Leu	Ala	Asp	Tyr	Ser	Lys	Met	Asp	Lys
145					150					155					160
Thr	Lys	Met	Pro	Ser	Gln	Tyr	Val	Glu	Tyr	Tyr	Glu	Gly	Met	His	Lys
				165					170					175	
Leu	Trp	Ser	Phe	Val	Glu	Lys	Thr	Leu	Ile	Gln	Ser	Arg	Leu	Ala	Glu
			180					185					190		
Lys	Tyr	Gln	Ala	Leu	Val	Thr	Lys	Ala	Leu	Phe	Ser	Asn	Pro	Val	Glu
		195					200					205			
Ala	Gln	Asp	Ala	Phe	Asp	Ala	Arg	Val	Asn	Gln	Ser	Asp	Val	Leu	Leu
		210				215					220				
Ala	Ala	Val	Pro	Tyr	Ser	Ser	Ile	Val	Asp	Ser	Thr	Ile	Thr	Val	Lys
225					230					235					240
Glu	Ser	Glu	Leu	Lys	Asp	Leu	Tyr	Asn	Lys	Lys	Lys	Glu	Gln	Phe	Lys
				245					250					255	
Gln	Tyr	Val	Glu	Thr	Arg	Asn	Ile	Lys	Tyr	Ile	Asp	Val	Gln	Val	Thr
			260					265					270		
Ala	Ser	Ala	Glu	Asp	Arg	Ala	Ala	Ile	Gln	Gln	Glu	Val	Thr	Asp	Tyr
		275				280						285			
Thr	Asn	Gln	Leu	Ala	Thr	Ala	Asn	Gly	Asp	Tyr	Thr	Thr	Phe	Ile	Arg
		290				295					300				
Ser	Thr	Gly	Ser	Glu	Tyr	Pro	Tyr	Val	Asp	Leu	Tyr	Tyr	Thr	Lys	Lys
305					310					315					320
Ala	Phe	Pro	Ser	Asp	Val	Val	Ala	Arg	Met	Asp	Ser	Ala	Ser	Ile	Gly
			325						330					335	
Gln	Val	Tyr	Gly	Pro	Tyr	Tyr	Asn	Ala	Gly	Asp	Asn	Thr	Ile	Asn	Ser
			340				345						350		
Phe	Lys	Val	Leu	Ser	Lys	Val	Ala	Ala	Ala	Asp	Ser	Val	Gln	Phe	Arg
		355					360					365			
Gln	Ile	Gln	Val	Tyr	Thr	Glu	Asp	Ala	Ala	Lys	Thr	Lys	Ala	Leu	Ala
		370				375					380				
Asp	Ser	Ile	Tyr	Thr	Ala	Ile	Lys	Gly	Gly	Ala	Asp	Phe	Thr	Ala	Leu
385					390					395					400
Ala	Lys	Lys	Tyr	Gly	Gln	Thr	Gly	Glu	Ser	Asn	Trp	Ile	Ser	Ser	Ala
			405						410					415	
Asn	Tyr	Glu	Asn	Ala	Gln	Val	Asp	Gly	Asp	Asn	Leu	Lys	Phe	Ile	Ser
			420					425					430		
Thr	Ile	Asn	Asn	Leu	Gly	Val	Asn	Glu	Leu	Ser	Asn	Val	Ala	Leu	Gly
		435					440					445			
Gln	Gly	Asn	Ile	Ile	Leu	Gln	Val	Thr	Asp	Lys	Lys	Ala	Val	Lys	Asp
		450				455					460				
Lys	Tyr	Lys	Val	Ala	Val	Ile	Lys	Arg	Ala	Val	Glu	Phe	Ser	Lys	Glu
465					470					475					480
Thr	Tyr	Asn	Lys	Ala	Tyr	Asn	Glu	Phe	Ser	Gln	Phe	Ile	Ala	Ala	Asn
			485						490					495	
Pro	Thr	Val	Asp	Lys	Val	Ala	Ala	Asn	Ala	Glu	Glu	Ser	Gly	Tyr	Lys
			500					505					510		
Leu	Leu	Glu	Arg	Asn	Asp	Leu	Tyr	Ser	Ser	Glu	His	Gly	Ile	Gly	Gly

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515	520	525
Ile Arg Gly Thr Lys Glu Ala Leu Lys Trp Ala Phe Ala Ala Lys Pro		
530	535	540
Gly Glu Val Ser Gly Leu Tyr Glu Cys Gly Glu Ser Asp Arg Met Leu		
545	550	555
Val Val Gly Leu Val Ser Val Ile Glu Glu Gly Tyr Arg Pro Leu Ala		
	565	570
Gln Val Gln Asp Gln Leu Arg Ala Glu Ile Ile Arg Asp Lys Lys Ala		
	580	585
Glu Lys Ile Met Ala Asp Met Lys Ala Ala Asn Ala Thr Thr Ile Ala		
	595	600
Gln Tyr Thr Ser Met Ala Asn Ala Val Ser Asp Ser Val Lys His Val		
	610	615
Thr Phe Ala Ala Pro Ala Tyr Val Ala Ala Leu Arg Ser Ser Glu Pro		
625	630	635
Leu Val Gly Ala Tyr Ala Ser Val Ser Asp Ile Asn Lys Leu Ser Ala		
	645	650
Pro Ile Lys Gly Asn Gly Gly Val Phe Val Leu Gln Val Tyr Ala Lys		
	660	665
Asp Lys Leu Asn Glu Thr Phe Asp Ala Gln Ser Glu Glu Ala Thr Leu		
	675	680
Glu Asn Met His Ala Arg Leu Ala Ser Arg Phe Met Asn Asp Leu Tyr		
	690	695
Leu Lys Gly Asp Val Lys Asp Lys Arg Tyr Leu Phe Phe		
705	710	715

<210> 6145

<211> 427

<212> PRT

<213> B.fragilis

<400> 6145

Thr Ile Ile Met Val Gly Tyr Lys Gln Thr Leu Cys Ala Leu Leu Leu		
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Thr Ile Leu Leu Pro Gly Val Ala Ile Ala Gln Asn Asn Thr Asn Ser		
	20	25
Pro Tyr Thr Arg Tyr Gly Tyr Gly Gln Leu Ala Asp Gln Ser Phe Ala		
	35	40
Asn Ser Lys Ala Met Gly Gly Ile Ala Tyr Gly Leu Arg Asp Gly Ser		
	50	55
His Ile Asn Pro Leu Asn Pro Ala Ser Tyr Thr Ala Ile Asp Ser Leu		
65	70	75
Thr Phe Leu Phe Asp Gly Gly Phe Ser Met Gln Asn Thr Asn Phe Ser		
	85	90
Ser Glu Gly Thr Lys Leu Asn Ala Lys Asn Ser Ser Phe Asp Tyr Ile		
	100	105
Ala Met Gln Phe Arg Leu His Gln Arg Val Ala Met Ser Ile Gly Leu		
	115	120
Leu Pro Tyr Ser Ser Val Gly Tyr Asn Met Ala Lys Ala Asn Asn Asp		
	130	135
Val Ala Ser Glu Glu Ala Arg Ser Val Thr Ser Phe Ala Gly Asp Gly		
145	150	155
Gly Leu His Gln Leu Tyr Val Gly Leu Gly Val Lys Val Leu Lys Asn		
	165	170
Leu Ser Val Gly Ala Asn Val Ser Tyr Phe Trp Gly Glu Ile Thr Arg		
	180	185
Gln Ala Arg Ile Thr Phe Pro Tyr Asn Asp Asn Ala Phe Ala Phe Gln		
	195	200
His Val Asp Tyr Leu Ser Val Arg Asp Tyr Lys Leu Asp Phe Gly Ala		

210	215	220
Gln Tyr Thr Gln Gln Leu Gly Arg Lys His Ala Val Thr Leu Gly Val		
225	230	235
Val Phe Ser Pro Lys Lys Asp Leu His Asn Glu Ala Tyr Val Gln Arg		240
	245	250
Ser Thr Leu Thr Asn Ser Asn Ser Thr Gln Ala Val Thr Thr Asn Thr		255
	260	265
Val Asp Thr Val Ala Thr Phe Gly Met Pro Asn Ser Phe Gly Val Gly		270
	275	280
Leu Thr Tyr Glu Tyr Asp Lys Arg Leu Ile Val Gly Ala Asp Phe Asn		285
	290	295
Leu Gln Lys Trp Gly Asp Val Thr Tyr Met Asn Gln Pro Asn Ala Phe		300
305	310	315
Cys Asp Ala Met Lys Ile Ser Val Gly Ala Glu Tyr Met Pro Ser Arg		320
	325	330
Phe Ser Arg Ser Tyr Leu Ala His Ile Lys Tyr Arg Val Gly Gly Tyr		335
	340	345
Tyr Ser Glu Pro Tyr Tyr Lys Ile Gly Gly Glu Arg Ala Ser Arg Glu		350
	355	360
Tyr Gly Val Thr Ala Gly Leu Gly Leu Pro Leu Pro Gly Ser Arg Ser		365
	370	375
Leu Ile Asn Val Ser Ala Gln Tyr Ile Lys Val His Gly Leu Lys Ala		380
385	390	395
Gly Met Val Asp Glu Asn Thr Leu Arg Leu Ser Ile Gly Ile Thr Phe		400
	405	410
Asn Glu Gly Trp Phe Phe Lys Arg Lys Val Lys		415
	420	425

<210> 6146
 <211> 218
 <212> PRT
 <213> B.fragilis

<400> 6146
Thr Lys Thr Ile Met Asn Asn Lys Asn Lys Phe Arg Phe Ala Ile Leu
1 5 10 15
Leu Phe Gly Val Leu Ser Ala Phe Ile Thr Thr Ala Cys Ser Asp Asn
20 25 30
Asn Ser Pro Asp Asp Pro Ala Gln Gly Glu Asn Thr Leu Pro Val Lys
35 40 45
Gln Val Ser Leu Ser Arg Lys Thr Ala Tyr Gly Asn Asp Trp Ile Tyr
50 55 60
Tyr Ser Leu Glu Lys Gly Lys Glu Val Ser Val Ser Glu Glu Ser His
65 70 75 80
Ala Glu Asn Thr Asp Trp Asp Ile Ala Phe Asn Arg Tyr Asn Val Arg
85 90 95
Thr Asn Ser Gly Ala Ser Gly Lys Gly Lys Gly Gly Ala Leu Leu Thr
100 105 110
Asn Ile Lys Asp Leu Ala Ala Cys Thr Thr Val Pro Gln Gly Thr Phe
115 120 125
Thr Val Asp Ala Ala Tyr Thr Ile Thr Ala Pro Gly Thr Gly Phe Pro
130 135 140
Pro Pro Thr Met Glu Ser Thr Ala Asn Glu Val Leu Cys Lys Ala Ile
145 150 155 160
Thr Phe Ala Gly Pro Pro Pro Thr Tyr Thr Pro Ser Asp Tyr Val Phe
165 170 175
Ile Val Arg Thr Ala Ser Gly Lys Tyr Ala Lys Leu Lys Ala Lys Ser
180 185 190
Phe Tyr Asp Asp Glu Gly Lys Ser Gly Ile Tyr Ser Phe Glu Tyr Ala

195 200 205
 Ile Gln Pro Asp Gly Ser Thr Asn Leu Asn
 210 215

<210> 6147
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 <212> PRT
 <213> B.fragilis

<400> 6147

Leu Tyr Met Met Ile Lys Asn Leu Lys Leu Ala Ala Leu Asn Ser Leu
 1 5 10 15
 Met Trp Asn Ala Val Glu Lys Met Ser Gly Gln Ala Leu Arg Phe Ile
 20 25 30
 Leu Thr Ile Val Ile Ala Arg Leu Val Ser Pro Ala Asp Phe Gly Leu
 35 40 45
 Ile Ala Met Leu Ser Ile Phe Leu Ser Val Ala Gln Ser Phe Ile Asp
 50 55 60
 Cys Gly Phe Tyr Asn Ala Leu Val Gln Lys Gln Asp Arg Thr Glu Val
 65 70 75 80
 Asp Tyr Ser Thr Met Phe Tyr Ser Asn Val Leu Ile Ser Val Val Val
 85 90 95
 Tyr Phe Phe Leu Tyr Trp Ser Ala Pro Tyr Ile Ala Ser Phe Tyr Ser
 100 105 110
 Gln Pro Glu Leu Lys Gln Ile Thr Arg Val Met Gly Val Ser Leu Ile
 115 120 125
 Ile Ser Ala Phe Arg Ile Val Gln Gln Ala Lys Leu Val Ile Ala Leu
 130 135 140
 Asn Phe Arg Ile Gln Ala Val Phe Ser Val Ile Ala Val Val Val Ser
 145 150 155 160
 Gly Leu Ile Gly Ile Tyr Met Ala Tyr His Gln Phe Gly Val Trp Ala
 165 170 175
 Leu Val Val Gln Ser Leu Val Ser Ala Phe Ile Ser Thr Val Ser Phe
 180 185 190
 Trp Ile Tyr Ser Arg Trp Met Pro Leu Trp Thr Phe Ser Ile Gln Ser
 195 200 205
 Phe Gln Glu Leu Phe Ser Phe Gly Ser Lys Leu Leu Ala Gly Val
 210 215 220
 Leu His Thr Ile Tyr Ser Asn Leu Tyr Thr Ile Val Ile Gly Arg Lys
 225 230 235 240
 Phe Ser Ser Val Asp Leu Gly Phe Phe Ser Arg Gly Gln Thr Met Ala
 245 250 255
 Tyr Phe Val Pro Ser Asn Met Thr Asn Ile Val Thr Met Ala Met Tyr
 260 265 270
 Pro Ile Leu Cys Ser Ile Gln Asp Asp Tyr Val Lys Leu Lys Lys Thr
 275 280 285
 Phe Lys Val Tyr Ile Arg Leu Val Cys Phe Ile Phe Phe Pro Ile Met
 290 295 300
 Ile Ile Leu Ala Val Leu Ser Glu Pro Ile Ile Lys Ile Val Leu Thr
 305 310 315 320
 Asp Lys Trp Leu Pro Ser Val Phe Tyr Val Gln Ile Leu Cys Ile Ala
 325 330 335
 Tyr Met Trp Asp Pro Leu Met Arg Ile Asn Ala Asn Ile Leu Ser Val
 340 345 350
 Val Gly Arg Thr Asp Tyr Ser Leu Lys Ser Glu Ile Ile Lys Lys Val
 355 360 365
 Ile Ser Val Ile Val Leu Phe Ile Thr Ile Pro Phe Gly Ile Asp Val
 370 375 380
 Met Cys Ile Gly Leu Ala Leu Tyr Cys Ile Ile Asp Leu Leu Val Ser

385 390 395 400
 Thr Tyr Tyr Val Lys Arg Ile Ile Gly Leu Gly Phe Trp Asp Glu Met
 405 410 415
 Arg Asn Ile Tyr Ala Phe Phe Ile Leu Ser Leu Val Ile Gly Gly Val
 420 425 430
 Val Phe Val Val Asn Ile Phe Val Glu Ser Asp Leu Leu Lys Ile Phe
 435 440 445
 Ile Gly Thr Leu Val Gly Ile Gly Leu Tyr Ile Ser Met Cys Ile Ile
 450 455 460
 Phe Arg Ile Lys Glu Val Phe Asp Phe Trp Ser Ile Ile Asn Ser Tyr
 465 470 475 480
 Leu Leu Gln Lys Lys
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<210> 6148
 <211> 192
 <212> PRT
 <213> B.fragilis

<400> 6148
 Ile Asn Lys Met Leu Asn Ile Val Ile Phe Gly Ala Pro Gly Ser Gly
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 Lys Gly Thr Gln Ser Glu Arg Ile Val Glu Lys Tyr Gly Ile Asn His
 20 25 30
 Ile Ser Thr Gly Asp Val Leu Arg Ala Glu Ile Lys Asn Gly Thr Glu
 35 40 45
 Leu Gly Lys Thr Ala Lys Gly Tyr Ile Asp Gln Gly Gln Leu Ile Pro
 50 55 60
 Asp Glu Leu Met Val Asp Ile Leu Ala Ser Val Phe Asp Ser Phe Lys
 65 70 75 80
 Asp Ser Lys Gly Val Ile Phe Asp Gly Phe Pro Arg Thr Ile Pro Gln
 85 90 95
 Ala Glu Ala Leu Lys Val Met Leu Lys Glu Arg Gly Gln Asp Ile Ser
 100 105 110
 Val Met Leu Asp Leu Asp Val Pro Glu Glu Glu Leu Met Thr Arg Leu
 115 120 125
 Ile Lys Arg Gly Lys Glu Ser Gly Arg Ala Asp Asp Asn Glu Glu Thr
 130 135 140
 Ile Lys Lys Arg Leu Val Tyr Asn Thr Gln Thr Ser Pro Leu Lys
 145 150 155 160
 Glu Tyr Tyr Lys Gly Glu Gly Lys Tyr Gln His Ile Asn Gly Leu Gly
 165 170 175
 Thr Met Glu Gly Ile Phe Glu Asp Ile Cys Lys Ala Val Asp Thr Leu
 180 185 190

<210> 6149
 <211> 157
 <212> PRT
 <213> B.fragilis

<400> 6149
 Phe Tyr Trp Ile Leu Leu Phe Tyr Thr Asn Lys Asn Arg Lys Glu
 1 5 10 15
 Ser Thr Asn His Asn Ser Phe Leu Phe Lys Met Lys Asn Ser Leu Cys
 20 25 30
 Asn Ser Val Ser Ser Val Val Lys Lys Leu Leu Glu Tyr Gly Glu Asp
 35 40 45
 Gly Thr Pro Val Tyr Val Asn Glu Leu Thr Ala Leu Asn Gln Glu Leu
 50 55 60

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Arg	Asn	Leu	Cys	Ala	Asp	Leu	Leu	Leu	Gln	Lys	Gly	Glu	Ser	Pro	Glu
65					70					75					80
Glu	Glu	Ala	Glu	Ile	Leu	Val	Thr	Leu	Phe	Lys	Gly	Tyr	Asp	Thr	Met
				85					90					95	
Leu	Phe	Asn	Phe	Ser	Ser	Glu	Asn	Glu	Gln	Val	Ile	Gln	Glu	Leu	Leu
			100					105					110		
Asp	Arg	Ser	Met	Thr	Val	Leu	Glu	Lys	Leu	Pro	Ala	Ser	Val	Leu	Lys
		115						120				125			
Cys	Gln	Leu	Leu	Leu	Glu	Cys	Phe	Glu	Gln	Thr	Gly	Asp	Glu	Glu	Leu
	130					135					140				
Ile	Arg	Glu	Val	Lys	Phe	Thr	Phe	Glu	Ser	Cys	Gly	Ile			
145					150					155					

<210> 6150

<211> 654

<212> PRT

<213> B.fragilis

<400> 6150

Lys	Leu	Tyr	Phe	Ile	Ile	Leu	Ser	Leu	Phe	Ala	Tyr	Ser	Lys	Thr	Asn
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Phe	Met	Ala	Met	Ala	His	Thr	Leu	Asp	Ser	Phe	Pro	Asp	Thr	Gly	Asp
			20					25					30		
Leu	Glu	Asn	Leu	Lys	Asp	Asn	Tyr	Gln	Lys	Ile	Thr	Ser	Val	Leu	Ala
		35				40						45			
Gly	His	Gln	Ile	Ala	Phe	Trp	Glu	Tyr	Asp	Ile	Pro	Thr	Gly	Glu	Cys
	50					55					60				
Asn	Phe	Thr	Asp	Glu	Tyr	Phe	His	Ile	Leu	Gly	Leu	Lys	Glu	Ala	Gly
65				70					75					80	
Ile	Ile	Phe	Arg	Asp	Ile	Asn	Asp	Phe	Tyr	Arg	Phe	Ala	His	Pro	Glu
			85					90					95		
Asp	Val	Ile	Ser	Tyr	Gln	Thr	Thr	Phe	Ala	Arg	Met	Leu	Glu	Ser	Glu
			100					105					110		
Thr	Lys	Ile	Ser	Gln	Ile	Val	Val	Arg	Cys	Val	Gly	Arg	Gln	Gly	Glu
		115					120					125			
Thr	Ile	Trp	Leu	Glu	Asp	Asn	Phe	Ile	Ala	Tyr	Lys	Lys	Asn	Lys	Glu
	130					135					140				
Asn	Gly	Ser	Asp	Lys	Ile	Ala	Tyr	Thr	Ala	Asn	Ile	Thr	Ser	Arg	
145				150					155					160	
Cys	Glu	Lys	Glu	Val	Gln	Ile	Arg	Gln	Leu	Glu	Glu	Arg	Asn	Arg	Lys
			165					170					175		
Ile	Ile	Glu	Ala	Leu	Pro	Glu	Phe	Ile	Phe	Ile	Phe	Asp	Asp	Asn	Phe
			180					185					190		
Phe	Ile	Thr	Asp	Val	Leu	Met	Ala	Pro	Asp	Thr	Glu	Leu	Leu	His	Pro
		195					200					205			
Val	Glu	Val	Leu	Thr	Gly	Ala	Asp	Gly	Arg	Ser	Ile	Tyr	Ser	Ser	Glu
	210					215					220				
Val	Ser	Asp	Leu	Phe	Ile	Ser	Ser	Ile	His	Glu	Cys	Leu	Lys	Ser	Gly
225				230					235					240	
Lys	Leu	Lys	Glu	Ile	Glu	Tyr	Pro	Val	Asp	Val	Glu	Ala	Gly	Arg	His
			245						250					255	
Phe	Phe	Gln	Ala	Arg	Ile	Ala	Pro	Phe	Glu	Gly	Asn	Lys	Val	Leu	Ala
			260					265					270		
Leu	Ile	His	Asp	Ile	Gly	Asp	Arg	Met	Arg	Arg	Ser	Gln	Glu	Leu	Leu
		275					280					285			
Glu	Ala	Lys	Gln	Arg	Ala	Glu	Glu	Ala	Asp	Arg	Met	Lys	Ser	Val	Phe
	290					295					300				
Leu	Ala	Asn	Met	Ser	His	Glu	Ile	Arg	Thr	Pro	Leu	Asn	Ala	Ile	Val
305					310					315					320

Gly Phe Ser Glu Ile Ile Ala Leu Thr Glu Asp Glu Lys Glu Lys Glu
 325 330 335
 Glu Tyr Leu Gly Ile Ile Gln Gln Asn Ser Asn Leu Leu Leu Gln Leu
 340 345 350
 Ile Asn Asp Ile Leu Asp Leu Ser Arg Ile Glu Ser Gly Lys Ser Glu
 355 360 365
 Met His Cys Gln Leu Thr Glu Met Ser Gly Leu Val Asp Glu Val Asp
 370 375 380
 Lys Val His Arg Leu Lys Met Lys Lys Gly Val Lys Leu Asn Val Ile
 385 390 395 400
 Arg Pro Ser Glu Glu Ile Trp Ile Ser Thr Asp Arg Asn Arg Val Thr
 405 410 415
 Gln Val Leu Phe Asn Phe Leu Ser Asn Ala Ile Lys Asn Thr Ile Glu
 420 425 430
 Gly Ser Ile Thr Phe Gly Leu Val Lys Glu Glu Glu Trp Val Lys Leu
 435 440 445
 Tyr Val Thr Asp Thr Gly Cys Gly Ile Ser Lys Glu Lys Leu Pro Leu
 450 455 460
 Ile Phe Thr Arg Phe Glu Lys Leu Asn Asp Phe Val Gln Gly Thr Gly
 465 470 475 480
 Leu Gly Leu Pro Ile Cys Lys Ser Ile Val Glu Arg Leu Gly Gly Arg
 485 490 495
 Ile Glu Val Glu Ser Glu Leu Gly Gln Gly Ser Thr Phe Ile Leu Tyr
 500 505 510
 Leu Pro Asn Arg Gln Val Gln Glu Val Val Val Gly Glu Arg Glu Asn
 515 520 525
 Ala Ala Gly Asn Met Gly Val Glu Asn Arg Gln Lys Lys Ile Leu Ile
 530 535 540
 Ala Glu Asp Val Glu Ser Ser Tyr Leu Gln Ile Asn Ala Phe Leu Lys
 545 550 555 560
 Lys Glu Tyr Thr Ile Leu Trp Val Pro Asn Gly Glu Glu Ala Val Lys
 565 570 575
 Ser Phe Ile Arg Glu Lys Pro Asp Leu Ile Leu Met Asp Ile Arg Met
 580 585 590
 Pro Val Met Asn Gly Ile Gln Ala Thr Ala Lys Ile Arg Ala Ile Ser
 595 600 605
 Gln Glu Ile Pro Ile Ile Ala Ile Thr Ala Tyr Ala Phe Cys Pro Glu
 610 615 620
 Gly Glu Arg Ala Leu Glu Ala Gly Cys Asn Glu Val Ile Ala Lys Pro
 625 630 635 640
 Tyr Pro Leu Glu Lys Leu Lys Glu Thr Ile Glu Thr Tyr Leu
 645 650

<210> 6151

<211> 210

<212> PRT

<213> B.fragilis

<400> 6151

Pro Asp Ser Phe Ile Asn Phe Asn Arg His Lys Phe His Thr Lys Gln
 1 5 10 15
 Tyr Tyr Leu Tyr Leu Cys Ala Leu Phe Ile Asn Lys Met Thr Glu Ser
 20 25 30
 Arg Ser Asn Leu Gln Lys Tyr Ala Met His Phe Gly Thr Tyr Met Gly
 35 40 45
 Val Tyr Trp Ile Leu Lys Phe Ile Leu Phe Pro Leu Gly Leu Ser Ile
 50 55 60
 Pro Phe Leu Leu Phe Leu Phe Phe Gly Leu Thr Leu Gly Val Pro Phe
 65 70 75 80


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<210> 6152
<211> 1294
<212> PRT
<213> B.fragilis
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Asn	Phe	Ile	Val	Lys	Ile	Met	Lys	Asn	Ala	Ile	Gly	Asn	Cys	Arg	Gln
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Arg	Lys	Ala	Val	Leu	Phe	Ala	Leu	Ala	Leu	Pro	Leu	Met	Phe	Ser	Gly
			20					25					30		
Ser	Pro	Ala	Gln	Ala	Met	His	Arg	Ser	Glu	Ile	Val	Arg	Glu	Val	Thr
		35					40					45			
Gln	Gln	Asn	Leu	Lys	Ile	Val	Ser	Ala	Lys	Lys	Ile	Asn	Pro	Thr	Thr
	50					55					60				
Ile	Glu	Val	Leu	Phe	Ser	Asn	Asn	Gln	Arg	Met	Thr	Phe	Asp	Phe	Tyr
65					70					75					80
Gly	Glu	Asn	Ile	Phe	Arg	Val	Phe	Gln	Asp	Asn	Ala	Gly	Gly	Ile	Ile
				85					90					95	
Arg	Asp	Pro	Glu	Ala	Lys	Pro	Glu	Ala	Gln	Ile	Leu	Val	Asn	Asn	Pro
			100					105					110		
Arg	Asn	Thr	Val	Ser	Thr	Leu	Asn	Leu	Asn	Asp	Gly	Ser	Asn	Leu	Ile
		115					120					125			
Ser	Ile	Thr	Thr	Gly	Lys	Ile	Lys	Val	Glu	Ile	Asp	Lys	Asn	Thr	Ser
		130				135					140				
Leu	Met	Lys	Val	Ile	Asp	Leu	Glu	Lys	Asn	Thr	Val	Ala	Phe	Glu	Glu
145					150					155					160
Val	Glu	Pro	Val	Leu	Phe	Asp	Lys	Gly	Lys	Val	Thr	Val	Thr	Leu	Lys
				165					170					175	
Glu	Asn	Pro	Asn	Glu	Tyr	Phe	Tyr	Gly	Gly	Gly	Val	Gln	Asn	Gly	Arg
			180					185					190		
Phe	Ser	His	Lys	Gly	Lys	Ala	Ile	Asn	Ile	Val	Asn	Glu	Asn	Ser	Trp
		195					200					205			
Thr	Asp	Gly	Gly	Val	Ala	Ser	Pro	Ala	Pro	Phe	Tyr	Trp	Ser	Thr	Asn
	210					215					220				
Gly	Tyr	Gly	Met	Met	Trp	Tyr	Thr	Phe	Lys	Pro	Gly	Lys	Tyr	Asp	Phe
225					230					235					240
Gly	Ala	Asp	Glu	Lys	Gly	Lys	Val	Lys	Leu	Thr	His	Asp	Ser	Pro	Tyr
				245					250					255	
Leu	Asp	Leu	Phe	Tyr	Met	Val	Ser	Asp	Gly	Ala	Val	Gly	Val	Leu	Asn
			260					265					270		

Asp Phe Tyr Gln Leu Thr Gly Asn Pro Val Leu Leu Pro Lys Phe Gly
 275 280 285
 Phe Tyr Gln Gly His Leu Asn Ala Tyr Asn Arg Asp Tyr Trp Lys Glu
 290 295 300
 Asp Glu Lys Gly Ile Leu Phe Glu Asp Gly Lys Arg Tyr Lys Glu Ser
 305 310 315 320
 Gln Lys Asp Asn Gly Gly Ile Lys Glu Ser Leu Asn Gly Glu Lys Asn
 325 330 335
 Asn Tyr Gln Phe Ser Ala Arg Ala Val Ile Asp Arg Tyr Lys Asn His
 340 345 350
 Asp Met Pro Leu Gly Trp Leu Leu Pro Asn Asp Gly Tyr Gly Ala Gly
 355 360 365
 Tyr Gly Gln Thr Glu Thr Leu Asp Gly Asn Ile Gln Asn Leu Lys Ser
 370 375 380
 Leu Gly Asp Tyr Ala Arg Lys Asn Gly Val Glu Ile Gly Leu Trp Thr
 385 390 395 400
 Gln Ser Asp Leu His Pro Lys Glu Gly Val Ser Ala Leu Leu Gln Arg
 405 410 415
 Asp Ile Val Lys Glu Val Arg Asp Ala Gly Val Arg Val Leu Lys Thr
 420 425 430
 Asp Val Ala Trp Val Gly Trp Gly Tyr Ser Phe Gly Leu Asn Gly Val
 435 440 445
 Ala Asp Val Gly His Ile Met Pro Tyr Tyr Gly Asn Asp Ala Arg Pro
 450 455 460
 Phe Ile Ile Ser Leu Asp Gly Trp Ala Gly Thr Gln Arg Tyr Ala Gly
 465 470 475 480
 Ile Trp Ser Gly Asp Gln Thr Gly Gly Val Trp Glu Tyr Ile Arg Phe
 485 490 495
 His Ile Pro Thr Tyr Ile Gly Ser Gly Leu Ser Gly Gln Pro Asn Ile
 500 505 510
 Ser Ser Asp Met Asp Gly Ile Phe Gly Gly Lys Asn Met Ile Val Asn
 515 520 525
 Thr Arg Asp Phe Gln Trp Lys Thr Phe Thr Pro Met Gln Leu Asn Met
 530 535 540
 Asp Gly Trp Gly Ser Asn Glu Lys Tyr Pro His Ala Leu Gly Glu Pro
 545 550 555 560
 Ala Thr Ser Ile Asn Arg Trp Tyr Leu Lys Leu Lys Ser Glu Leu Leu
 565 570 575
 Pro Tyr Thr Tyr Ser Phe Ala Lys Glu Ala Val Thr Gly Met Pro Leu
 580 585 590
 Ile Arg Ala Met Phe Leu Glu Tyr Pro Asn Ala Tyr Thr Leu Gly Thr
 595 600 605
 Ala Thr Gln Tyr Gln Phe Met Tyr Gly Thr Asp Phe Leu Val Ala Pro
 610 615 620
 Ile Tyr Lys Ala Thr Lys Ala Asp Ala Lys Gly Asn Asp Ile Arg Asp
 625 630 635 640
 Gly Ile Tyr Leu Pro Glu Gly Glu Trp Ile Asp Tyr Phe Thr Gly Glu
 645 650 655
 Lys Tyr Gln Gly Asn Cys Val Leu Asn Asn Phe Ala Ala Pro Leu Trp
 660 665 670
 Lys Leu Pro Val Phe Val Lys Asn Gly Ala Ile Ile Pro Met Thr Asn
 675 680 685
 Pro Asn Asn Val Ala Glu Ile Asn Lys Gly Leu Arg Ile Tyr Glu
 690 695 700
 Ile Tyr Pro Tyr Lys His Met Met Thr Val Glu Tyr Asp Asp Asp Gly
 705 710 715 720
 Ile Ser Glu Ala Tyr Lys Glu Gly Lys Gly Thr Thr Thr Phe Ile Glu
 725 730 735
 Ser Asn Val Asp Ser Lys Asn Asn Val Lys Ile Ser Ile Arg Pro Thr

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740										745										750																											
Gln	Gly	Asp	Phe	Asp	Gly	Phe	Val	Lys	Glu	Lys	Ala	Thr	Glu	Phe	Arg	Gln	Gly	Asp	Phe	Asp	Gly	Phe	Val	Lys	Glu	Lys	Ala	Thr	Glu	Phe	Arg	Gln	Gly	Asp	Phe	Asp	Gly	Phe	Val	Lys	Glu	Lys	Ala	Thr	Glu	Phe	Arg
755										760										765																											
Val	Asn	Val	Thr	Ala	Lys	Pro	Lys	Lys	Val	Ser	Ala	Gln	Ile	Gly	Lys	Val	Asn	Val	Thr	Ala	Lys	Pro	Lys	Lys	Val	Ser	Ala	Gln	Ile	Gly	Lys	Val	Asn	Val	Thr	Ala	Lys	Pro	Lys	Lys	Val	Ser	Ala	Gln	Ile	Gly	Lys
770										775										780																											
Gly	Lys	Val	Lys	Leu	Thr	Glu	Val	Ser	Ser	Met	Asp	Asp	Phe	Arg	Lys	Gly	Lys	Val	Lys	Leu	Thr	Glu	Val	Ser	Ser	Met	Asp	Asp	Phe	Arg	Lys	Gly	Lys	Val	Lys	Leu	Thr	Glu	Val	Ser	Ser	Met	Asp	Asp	Phe	Arg	Lys
785										790										795																											
Gly	Glu	Asn	Val	Tyr	Phe	Tyr	Asp	Ala	Ala	Pro	Asn	Leu	Asn	Lys	Phe	Gly	Glu	Asn	Val	Tyr	Phe	Tyr	Asp	Ala	Ala	Pro	Asn	Leu	Asn	Lys	Phe	Gly	Glu	Asn	Val	Tyr	Phe	Tyr	Asp	Ala	Ala	Pro	Asn	Leu	Asn	Lys	Phe
805										810										815																											
Ala	Thr	Lys	Gly	Ser	Glu	Phe	Glu	Lys	Lys	Val	Ile	Thr	Lys	Asn	Pro	Ala	Thr	Lys	Gly	Ser	Glu	Phe	Glu	Lys	Lys	Val	Ile	Thr	Lys	Asn	Pro	Ala	Thr	Lys	Gly	Ser	Glu	Phe	Glu	Lys	Lys	Val	Ile	Thr	Lys	Asn	Pro
820										825										830																											
Gln	Val	Leu	Val	Lys	Leu	Ala	Ala	Thr	Asp	Ile	Thr	Lys	Asn	Gln	Val	Gln	Val	Leu	Val	Lys	Leu	Ala	Ala	Thr	Asp	Ile	Thr	Lys	Asn	Gln	Val	Gln	Val	Leu	Val	Lys	Leu	Ala	Ala	Thr	Asp	Ile	Thr	Lys	Asn	Gln	Val
835										840										845																											
Val	Met	Asp	Ile	Glu	Gly	Phe	Gln	Tyr	Ala	Pro	Ala	Asp	Asn	Tyr	Arg	Val	Met	Asp	Ile	Glu	Gly	Phe	Gln	Tyr	Ala	Pro	Ala	Asp	Asn	Tyr	Arg	Val	Met	Asp	Ile	Glu	Gly	Phe	Gln	Tyr	Ala	Pro	Ala	Asp	Asn	Tyr	Arg
850										855										860																											
Val	Thr	Ser	Gly	Ser	Leu	Thr	Ala	Pro	Ala	Ala	Arg	Ile	Ala	Ala	Glu	Val	Thr	Ser	Gly	Ser	Leu	Thr	Ala	Pro	Ala	Ala	Arg	Ile	Ala	Ala	Glu	Val	Thr	Ser	Gly	Ser	Leu	Thr	Ala	Pro	Ala	Ala	Arg	Ile	Ala	Ala	Glu
865										870										875																											
Asp	Ile	Glu	Ala	Tyr	Thr	Leu	Lys	Pro	Thr	Trp	Asn	Lys	Val	Pro	Asn	Asp	Ile	Glu	Ala	Tyr	Thr	Leu	Lys	Pro	Thr	Trp	Asn	Lys	Val	Pro	Asn	Asp	Ile	Glu	Ala	Tyr	Thr	Leu	Lys	Pro	Thr	Trp	Asn	Lys	Val	Pro	Asn
885										890										895																											
Ala	Asp	Phe	Tyr	Glu	Ile	Glu	Phe	Asn	Gly	Met	Leu	Tyr	Thr	Thr	Ile	Ala	Asp	Phe	Tyr	Glu	Ile	Glu	Phe	Asn	Gly	Met	Leu	Tyr	Thr	Thr	Ile	Ala	Asp	Phe	Tyr	Glu	Ile	Glu	Phe	Asn	Gly	Met	Leu	Tyr	Thr	Thr	Ile
900										905										910																											
Lys	Asp	Thr	Glu	Leu	Leu	Phe	Asp	Gly	Leu	Ala	Ala	Glu	Thr	Asp	Tyr	Lys	Asp	Thr	Glu	Leu	Leu	Phe	Asp	Gly	Leu	Ala	Ala	Glu	Thr	Asp	Tyr	Lys	Asp	Thr	Glu	Leu	Leu	Phe	Asp	Gly	Leu	Ala	Ala	Glu	Thr	Asp	Tyr
915										920										925																											
Thr	Phe	Lys	Ile	Arg	Ala	Val	Asn	Lys	Asp	Gly	Tyr	Ser	Asp	Trp	Ala	Thr	Phe	Lys	Ile	Arg	Ala	Val	Asn	Lys	Asp	Gly	Tyr	Ser	Asp	Trp	Ala	Thr	Phe	Lys	Ile	Arg	Ala	Val	Asn	Lys	Asp	Gly	Tyr	Ser	Asp	Trp	Ala
930										935										940																											
Glu	Phe	Gly	Ala	Lys	Thr	Lys	Ala	Asn	Pro	Leu	Glu	Phe	Ala	Leu	His	Glu	Phe	Gly	Ala	Lys	Thr	Lys	Ala	Asn	Pro	Leu	Glu	Phe	Ala	Leu	His	Glu	Phe	Gly	Ala	Lys	Thr	Lys	Ala	Asn	Pro	Leu	Glu	Phe	Ala	Leu	His
945										950										955																											
Gly	Ile	Lys	Gly	Glu	Thr	Thr	Ala	Lys	Asn	Gln	Glu	Gly	Phe	Asp	Ile	Gly	Ile	Lys	Gly	Glu	Thr	Thr	Ala	Lys	Asn	Gln	Glu	Gly	Phe	Asp	Ile	Gly	Ile	Lys	Gly	Glu	Thr	Thr	Ala	Lys	Asn	Gln	Glu	Gly	Phe	Asp	Ile
965										970										975																											
Asp	Arg	Leu	Phe	Asp	Phe	Ala	Glu	Leu	Gly	Asp	Met	Trp	His	Thr	Lys	Asp	Arg	Leu	Phe	Asp	Phe	Ala	Glu	Leu	Gly	Asp	Met	Trp	His	Thr	Lys	Asp	Arg	Leu	Phe	Asp	Phe	Ala	Glu	Leu	Gly	Asp	Met	Trp	His	Thr	Lys
980										985										990																											
Tyr	Gly	Ala	Lys	Ala	Leu	Pro	Tyr	Asp	Met	Ile	Ile	Asp	Leu	Arg	Thr	Tyr	Gly	Ala	Lys	Ala	Leu	Pro	Tyr	Asp	Met	Ile	Ile	Asp	Leu	Arg	Thr	Tyr	Gly	Ala	Lys	Ala	Leu	Pro	Tyr	Asp	Met	Ile	Ile	Asp	Leu	Arg	Thr
995										1000										1005																											
Val	Asn	Gln	Leu	Asp	Lys	Phe	Glu	Tyr	Leu	Pro	Arg	Thr	Asp	Gly	Gly	Val	Asn	Gln	Leu	Asp	Lys	Phe	Glu	Tyr	Leu	Pro	Arg	Thr	Asp	Gly	Gly	Val	Asn	Gln	Leu	Asp	Lys	Phe	Glu	Tyr	Leu	Pro	Arg	Thr	Asp	Gly	Gly
1010										1015										1020																											
Asn	Gly	Thr	Ile	Leu	Lys	Gly	Thr	Val	Tyr	Tyr	Ser	Met	Asp	Lys	Glu	Asn	Gly	Thr	Ile	Leu	Lys	Gly	Thr	Val	Tyr	Tyr	Ser	Met	Asp	Lys	Glu	Asn	Gly	Thr	Ile	Leu	Lys	Gly	Thr	Val	Tyr	Tyr	Ser	Met	Asp	Lys	Glu
1025										1030										1035																											
Asn	Trp	Thr	Glu	Ala	Gly	Ala	Ile	Asp	Trp	Lys	Arg	Asn	Gly	Asp	Val	Asn	Trp	Thr	Glu	Ala	Gly	Ala	Ile	Asp	Trp	Lys	Arg	Asn	Gly	Asp	Val	Asn	Trp	Thr	Glu	Ala	Gly	Ala	Ile	Asp	Trp	Lys	Arg	Asn	Gly	Asp	Val
1045										1050										1055																											
Lys	Val	Phe	Thr	Phe	Thr	Glu	Arg	Pro	Thr	Ala	Arg	Tyr	Ile	Lys	Leu	Lys	Val	Phe	Thr	Phe	Thr	Glu	Arg	Pro	Thr	Ala	Arg	Tyr	Ile	Lys	Leu	Lys	Val	Phe	Thr	Phe	Thr	Glu	Arg	Pro	Thr	Ala	Arg	Tyr	Ile	Lys	Leu
1060										1065										1070																											
Ala	Val	Thr	Glu	Gly	Val	Asn	Asn	Tyr	Gly	Ser	Gly	Arg	Glu	Leu	Tyr	Ala	Val	Thr	Glu	Gly	Val	Asn	Asn	Tyr	Gly	Ser	Gly	Arg	Glu	Leu	Tyr	Ala	Val	Thr	Glu	Gly	Val	Asn	Asn	Tyr	Gly	Ser	Gly	Arg	Glu	Leu	Tyr
1075										1080										1085																											
Val	Phe	Lys	Val	Pro	Gly	Thr	Glu	Ser	Arg	Leu	Gln	Gly	Asp	Ile	Asn	Val	Phe	Lys	Val	Pro	Gly	Thr	Glu	Ser	Arg	Leu	Gln	Gly	Asp	Ile	Asn	Val	Phe	Lys	Val	Pro	Gly	Thr	Glu	Ser	Arg	Leu	Gln	Gly	Asp	Ile	Asn
1090										1095										1100																											
Asn	Asp	Gly	Lys	Ile	Asp	Asn	Asn	Asp	Leu	Thr	Ser	Tyr	Thr	Asn	Tyr	Asn	Asp	Gly	Lys	Ile	Asp	Asn	Asn	Asp	Leu	Thr	Ser	Tyr	Thr	Asn	Tyr	Asn	Asp	Gly	Lys	Ile	Asp	Asn	Asn	Asp	Leu	Thr	Ser	Tyr	Thr	Asn	Tyr
1105										1110										1115																											
Thr	Gly	Leu	Arg	Lys	Gly	Asp	Ser	Asp	Tyr	Glu	Gly	Tyr	Ile	Ser	Val	Thr	Gly	Leu	Arg	Lys	Gly	Asp	Ser	Asp	Tyr	Glu	Gly	Tyr	Ile	Ser	Val	Thr	Gly	Leu	Arg	Lys	Gly	Asp	Ser	Asp	Tyr	Glu	Gly	Tyr	Ile	Ser	Val
1125										1130										1135																											
Gly	Asp	Ile	Asp	Gln	Asn	Gly	Leu	Ile	Asp	Ala	Tyr	Asp	Ile	Ser	Val	Gly	Asp	Ile	Asp	Gln	Asn	Gly	Leu	Ile	Asp	Ala	Tyr	Asp	Ile	Ser	Val	Gly	Asp	Ile	Asp	Gln	Asn	Gly	Leu	Ile	Asp	Ala	Tyr	Asp	Ile	Ser	Val
1140										1145										1150																											
Val	Ala	Thr	Gln	Leu	Glu	Asp	Gly	Val	Ser	Glu	Glu	Pro	Ile	Glu	Lys	Val	Ala	Thr	Gln	Leu	Glu	Asp	Gly	Val	Ser	Glu	Glu	Pro	Ile	Glu	Lys	Val	Ala	Thr	Gln	Leu	Glu	Asp	Gly	Val	Ser	Glu	Glu	Pro	Ile	Glu	Lys
1155										1160										1165																											
Leu	Asp	Gly	Thr	Ile	Glu	Ile	Ser	Thr	Ala	Lys	Arg	Asn	Tyr	Ser	Lys	Leu	Asp	Gly	Thr	Ile	Glu	Ile	Ser	Thr	Ala	Lys	Arg	Asn	Tyr	Ser	Lys	Leu	Asp	Gly	Thr	Ile	Glu	Ile	Ser	Thr	Ala	Lys	Arg	Asn	Tyr	Ser	Lys
1170										1175										1180																											
Gly	Asp	Val	Val	Glu	Val	Leu	Val	Lys	Gly	Val	Asn	Leu	Arg	Ser	Val	Gly	Asp	Val	Val	Glu	Val	Leu	Val	Lys	Gly	Val	Asn	Leu	Arg	Ser	Val	Gly	Asp	Val	Val	Glu	Val	Leu	Val	Lys	Gly	Val	Asn	Leu	Arg	Ser	Val
1185										1190										1195																											
Asn	Ala	Leu	Ser	Phe	Ala	Leu	Pro	Tyr	Asn	Gln	Gln	Asp	Tyr	Glu	Phe	Asn	Ala	Leu	Ser	Phe	Ala	Leu	Pro	Tyr	Asn	Gln	Gln	Asp	Tyr	Glu	Phe	Asn	Ala	Leu	Ser	Phe	Ala	Leu	Pro	Tyr	Asn	Gln	Gln	Asp	Tyr	Glu	Phe
1205										1210										1215																											

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<210> 6153
<211> 349
<212> PRT
<213> B.fragilis
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Ile	Phe	Val	Val	Asn	Met	Pro	Lys	Tyr	Pro	Leu	Leu	Gly	Met	Thr	Leu
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Thr	Glu	Leu	Gln	Ser	Val	Thr	Lys	Asp	Leu	Gly	Met	Pro	Ala	Phe	Ala
			20					25					30		
Ala	Lys	Gln	Ile	Ala	Ser	Trp	Leu	Tyr	Asp	Lys	Lys	Val	Thr	Ser	Ile
		35					40					45			
Asp	Glu	Met	Thr	Asn	Leu	Ser	Leu	Lys	His	Arg	Glu	Leu	Leu	Lys	Gly
	50					55					60				
Glu	Tyr	Asp	Leu	Gly	Ile	Ser	Ala	Pro	Val	Asp	Glu	Met	Arg	Ser	Val
65					70					75				80	
Asp	Gly	Thr	Val	Lys	Tyr	Leu	Tyr	Gln	Val	Ser	Asp	Asn	His	Phe	Val
				85					90					95	
Glu	Ala	Val	Tyr	Ile	Pro	Asp	Glu	Asp	Arg	Ala	Thr	Leu	Cys	Val	Ser
			100					105					110		
Ser	Gln	Val	Gly	Cys	Lys	Met	Asn	Cys	Lys	Phe	Cys	Met	Thr	Gly	Lys
		115					120					125			
Gln	Gly	Phe	Thr	Ala	Ser	Leu	Thr	Ala	Asn	Gln	Ile	Leu	Asn	Gln	Ile
	130					135					140				
Ala	Ala	Leu	Pro	Glu	Arg	Asp	Lys	Leu	Thr	Asn	Val	Val	Met	Met	Gly
145					150					155					160
Met	Gly	Glu	Pro	Ile	Asp	Asn	Leu	Asp	Glu	Val	Leu	Lys	Ala	Leu	His
				165					170					175	
Ile	Leu	Thr	Ala	Ser	Tyr	Gly	Tyr	Gly	Trp	Ser	Pro	Lys	Arg	Ile	Thr
		180						185					190		
Leu	Ser	Ser	Val	Gly	Leu	Arg	Lys	Gly	Leu	Gln	Arg	Phe	Ile	Glu	Glu
		195					200					205			
Ser	Glu	Cys	His	Leu	Ala	Ile	Ser	Leu	His	Ser	Pro	Phe	Pro	Ser	Gln
	210					215					220				
Arg	Ser	Glu	Leu	Met	Pro	Ala	Glu	Arg	Ala	Phe	Ser	Ile	Lys	Glu	Met
225					230					235					240
Val	Asp	Leu	Leu	Lys	Asn	Tyr	Asp	Phe	Ser	Lys	Gln	Arg	Arg	Leu	Ser
				245					250					255	
Phe	Glu	Tyr	Ile	Val	Phe	Lys	Gly	Val	Asn	Asp	Ser	Leu	Ile	Tyr	Ala
		260						265					270		
Lys	Glu	Leu	Leu	Lys	Leu	Leu	Arg	Gly	Leu	Asp	Cys	Arg	Val	Asn	Leu
	275						280					285			
Ile	Arg	Phe	His	Ala	Ile	Pro	Gly	Val	Asp	Leu	Glu	Gly	Ala	Gly	Met
	290					295					300				
Glu	Thr	Met	Thr	Ser	Phe	Arg	Asp	Tyr	Leu	Thr	Ser	His	Gly	Leu	Phe
305					310					315					320
Thr	Thr	Ile	Arg	Ala	Ser	Arg	Gly	Glu	Asp	Ile	Phe	Ala	Ala	Cys	Gly
				325					330					335	

Threat	Control	Threat	Control
Threat 1	Control 1	Threat 2	Control 2
Threat 3	Control 3	Threat 4	Control 4
Threat 5	Control 5	Threat 6	Control 6
Threat 7	Control 7	Threat 8	Control 8
Threat 9	Control 9	Threat 10	Control 10
Threat 11	Control 11	Threat 12	Control 12
Threat 13	Control 13	Threat 14	Control 14
Threat 15	Control 15	Threat 16	Control 16
Threat 17	Control 17	Threat 18	Control 18
Threat 19	Control 19	Threat 20	Control 20
Threat 21	Control 21	Threat 22	Control 22
Threat 23	Control 23	Threat 24	Control 24
Threat 25	Control 25	Threat 26	Control 26
Threat 27	Control 27	Threat 28	Control 28
Threat 29	Control 29	Threat 30	Control 30
Threat 31	Control 31	Threat 32	Control 32
Threat 33	Control 33	Threat 34	Control 34
Threat 35	Control 35	Threat 36	Control 36
Threat 37	Control 37	Threat 38	Control 38
Threat 39	Control 39	Threat 40	Control 40
Threat 41	Control 41	Threat 42	Control 42
Threat 43	Control 43	Threat 44	Control 44
Threat 45	Control 45	Threat 46	Control 46
Threat 47	Control 47	Threat 48	Control 48
Threat 49	Control 49	Threat 50	Control 50
Threat 51	Control 51	Threat 52	Control 52
Threat 53	Control 53	Threat 54	Control 54
Threat 55	Control 55	Threat 56	Control 56
Threat 57	Control 57	Threat 58	Control 58
Threat 59	Control 59	Threat 60	Control 60
Threat 61	Control 61	Threat 62	Control 62
Threat 63	Control 63	Threat 64	Control 64
Threat 65	Control 65	Threat 66	Control 66
Threat 67	Control 67	Threat 68	Control 68
Threat 69	Control 69	Threat 70	Control 70
Threat 71	Control 71	Threat 72	Control 72
Threat 73	Control 73	Threat 74	Control 74
Threat 75	Control 75	Threat 76	Control 76
Threat 77	Control 77	Threat 78	Control 78
Threat 79	Control 79	Threat 80	Control 80
Threat 81	Control 81	Threat 82	Control 82
Threat 83	Control 83	Threat 84	Control 84
Threat 85	Control 85	Threat 86	Control 86
Threat 87	Control 87	Threat 88	Control 88
Threat 89	Control 89	Threat 90	Control 90
Threat 91	Control 91	Threat 92	Control 92
Threat 93	Control 93	Threat 94	Control 94
Threat 95	Control 95	Threat 96	Control 96
Threat 97	Control 97	Threat 98	Control 98
Threat 99	Control 99	Threat 100	Control 100

Met Leu Ser Thr Ala Lys Gln Glu Glu Ser Asn Lys Asn
 340 345

<210> 6154
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 6154
 Asn Cys Ala Val Gln Gln Met Ile Pro Ala Phe Ala Ser Leu Ser Phe
 1 5 10 15
 Ile Val Tyr Lys Glu Arg Glu Ala Glu Gln Met Pro Arg Met Glu Asp
 20 25 30
 Lys Gln Gln Val Ile Gly Ala Tyr Arg Gly Val Phe Gly Glu Lys Ser
 35 40 45
 Lys Glu Ser Asp Asp Ala Ser Cys Asp Thr Arg Cys Arg Lys His Cys
 50 55 60
 Asp Ile Gln Ser Pro Lys Thr Leu Phe Leu Ala
 65 70 75

<210> 6155
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 6155
 Asn Glu Glu Val Val Thr Thr Tyr Val Gly Ala Lys Ile Asp Asn Ile
 1 5 10 15
 Arg His Ile Glu Arg Lys Arg Gly Trp Ile Leu Asp Ile Leu Phe Ile
 20 25 30
 Pro Glu Arg Asn Thr Gly Asp Tyr Thr Asn Phe Val Phe Ser Glu Cys
 35 40 45
 Asn Lys Asp Asn Gln Gln Asn Leu Lys Thr Thr Ser Ile His Tyr Gly
 50 55 60
 Gln Glu Asn His
 65

<210> 6156
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 6156
 Arg Thr Lys Val Gln Ile Ile Leu Phe Gly Met Glu Phe Met Pro Val
 1 5 10 15
 Lys Val Asn Lys Ala Ile Arg Ser Glu Lys Lys His Phe Phe Phe Asp
 20 25 30
 Phe Lys Tyr Leu Lys Ser Arg Ser Leu Pro Val Lys His Ala Lys Lys
 35 40 45
 Tyr Arg Ser Pro Ile Ala Gly Leu Ile Lys Ile Pro Thr Phe Ala Pro
 50 55 60
 Gly
 65

<210> 6157
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 6157

Phe Phe Leu Phe Ser Leu Phe Leu Leu Phe Phe Ser Leu Cys Lys Phe
 1 5 10 15
 Thr His Leu Trp Glu Ala Glu Glu Ser Leu Leu Ile Gly Ile Pro Phe
 20 25 30
 Gly Phe Leu Pro Tyr Lys Ser Val Ser Leu Leu Leu Tyr Tyr Lys Thr
 35 40 45
 Lys Lys Arg Glu Glu Arg Phe Asn Arg Leu Leu Phe
 50 55 60

<210> 6158

<211> 63

<212> PRT

<213> B.fragilis

<400> 6158

Arg Glu Gln Phe Ser Ile Thr Gly Asn Ala Gly Pro Tyr Lys Thr Ala
 1 5 10 15
 Thr His Val Val Met Glu Phe Leu Phe Gly Thr Ser Cys Arg Ser Leu
 20 25 30
 Leu Phe Pro Ile Leu Arg Cys Phe Phe Arg Ser Ile Arg Phe Tyr Phe
 35 40 45
 Arg Pro Ser Ala Asn Val Asn Pro Tyr Phe Gly Ile Tyr Arg Ile
 50 55 60

<210> 6159

<211> 65

<212> PRT

<213> B.fragilis

<400> 6159

Glu Val Phe Phe Thr Ser Ala Tyr Ile Ala Ala Pro Ala Lys Thr Gly
 1 5 10 15
 His Ala Ser Phe Asn Ser Phe Asp Thr Ile Met Val Tyr Ile Ile Asn
 20 25 30
 Gln Asn Phe Ile Tyr Gln Leu Phe Ile Ile Met Pro Asp Lys Ile Arg
 35 40 45
 Pro Asp Phe Met Pro Asn Leu Arg Ala Glu Lys Lys Ser Ser Cys Arg
 50 55 60

Met

65

<210> 6160

<211> 419

<212> PRT

<213> B.fragilis

<400> 6160

Ile Phe Tyr Ser Phe Arg Lys Glu Thr Gln Glu Ile Ile Leu Thr Leu
 1 5 10 15
 Tyr Phe Gln Asn Val Thr Lys Thr Thr Asn Lys Ile Ser Lys Gln His
 20 25 30
 Leu Phe Ile Met Val Lys Lys Ile Ile Ser Ile Cys Ala Ala Gly Met
 35 40 45
 Ile Val Ala Ser Cys Ser Pro Lys Lys Thr Thr Ala Gln Pro Thr Asp
 50 55 60
 Pro Ser Thr Thr Asp Ser Glu Leu Thr Met Leu Val Gly Thr Tyr Thr
 65 70 75 80
 Ser Gly Asn Ser Lys Gly Ile Tyr Thr Phe Arg Phe Asn Glu Glu Thr

$$\begin{array}{ccccccc} \mathbb{Z} & \xrightarrow{\varphi_1} & \mathbb{Z} & \xrightarrow{\varphi_2} & \mathbb{Z} & \xrightarrow{\varphi_3} & \mathbb{Z} \\ \varphi_1 & \downarrow & \varphi_2 & \downarrow & \varphi_3 & \downarrow & \\ \mathbb{Z} & \xrightarrow{\varphi_1} & \mathbb{Z} & \xrightarrow{\varphi_2} & \mathbb{Z} & \xrightarrow{\varphi_3} & \mathbb{Z} \\ \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots \\ \mathbb{Z} & \xrightarrow{\varphi_1} & \mathbb{Z} & \xrightarrow{\varphi_2} & \mathbb{Z} & \xrightarrow{\varphi_3} & \mathbb{Z} \end{array}$$

<400> 6161

Thr	Met	Cys	Ser	Lys	Ile	Lys	His	Ile	Leu	Leu	Thr	Ala	Cys	Cys	Phe
1				5					10					15	
Thr	Gly	Ala	Gly	Leu	Met	Thr	Ser	Cys	Asn	Asp	Gly	Phe	Met	Asp	Arg
			20					25					30		
Phe	Pro	Glu	Thr	Ser	Ile	Thr	Glu	Lys	Val	Phe	Phe	Ser	Ser	Pro	Ala
		35					40					45			
Asp	Leu	Glu	Thr	Tyr	Thr	Asn	Gly	Met	Tyr	Gly	Tyr	Ile	Gly	Ala	Ser
	50					55					60				
Tyr	Ser	Asp	Thr	Pro	Ser	Asp	Asn	Met	Leu	Tyr	Pro	Glu	Asp	Thr	Asp

[illegible]

Glu Gly Asn Thr Ile Gly Leu Thr Glu Gly Thr Lys Gly Tyr Ile Tyr
 545 550 555 560
 Leu Val Ala Gln His Asn Lys Tyr Thr Phe Val Ser Pro Lys Tyr Tyr
 565 570 575
 Tyr Tyr Pro Val Ala Thr Lys Asp Ile Thr Val Asn Glu Asn Leu Tyr
 580 585 590
 Gln Asn Pro Phe Trp Glu
 595

<210> 6162
 <211> 131
 <212> PRT
 <213> B.fragilis

<400> 6162
 Tyr Ser Glu Ser Ala Gly Ser Cys Ile Met Pro Thr Thr Gly Phe Cys
 1 5 10 15
 Pro Gly Ser Pro Cys Ser Pro Leu Phe Pro Leu Val Pro Ser Thr Pro
 20 25 30
 Ser Leu Pro Ser Val Pro Ser Thr Pro Ser Leu Pro Ser Val Pro Phe
 35 40 45
 Val Pro Ser Ala Pro Ser Leu Pro Ser Val Pro Phe Ser Pro Ser Phe
 50 55 60
 Pro Ser Val Pro Ser Val Pro Ser Thr Pro Ser Leu Pro Ser Val Pro
 65 70 75 80
 Ser Thr Pro Ser Leu Pro Ser Val Pro Ser Met Pro Ser Phe Pro Ala
 85 90 95
 Ser Pro Ser Gly Pro Val Ser Pro Phe Phe Pro Leu Arg Ile Val Ile
 100 105 110
 Gly Ala Leu Leu Glu Lys Glu Ile Val Tyr Pro Ala Pro Ser Ala Ser
 115 120 125
 Ser Ser Ile
 130

<210> 6163
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 6163
 Gly Ile Gly Pro Ser Tyr Leu Val Asn Ser Phe Lys Phe Ala Ser Pro
 1 5 10 15
 Asn Tyr Pro Phe Leu Tyr Ile Arg Ser Asn Ile Phe Phe Lys Pro Leu
 20 25 30
 Arg Asp Phe Thr Ser Gln Cys Pro Pro Tyr Arg Ile Asp Thr Phe Cys
 35 40 45
 Tyr Leu Ser Ile Leu Glu Ser Tyr Thr Cys Trp Asn Met Phe Ile Pro
 50 55 60
 Lys Lys Met
 65

<210> 6164
 <211> 296
 <212> PRT
 <213> B.fragilis

<400> 6164
 Asp Ile Gly Thr Phe Leu Phe Phe Tyr Asn Ile His Gln Pro Met Lys
 1 5 10 15

Thr Leu Ile Glu Asn Leu Thr Ser Asp Leu Leu Pro Asn Gln Ile Phe
 20 25 30
 Gln Thr Gly Phe Ser Phe Leu Ile Ile Leu Lys Gly Asn Ser Leu Leu
 35 40 45
 Lys Leu Asp Ser Asn Val Leu Ile Phe Ile Met Ser Gly Thr Met Lys
 50 55 60
 Val Ser Ser Ala Gln Gln Glu Leu Ala Thr Val Arg Glu Arg His Ile
 65 70 75 80
 Phe Phe Trp Asp Lys Glu Asp Asp Tyr Thr Cys Glu Met Leu Ser Asp
 85 90 95
 Ser Gln Val Ile Leu Phe Ala Phe Gly Asp Leu Ile Val His Asp Leu
 100 105 110
 Leu Thr Phe Arg Pro Phe Gly Ala Ile Ser Asp Ser Ser Val Ser Lys
 115 120 125
 Asp Val Gly Leu Lys Phe Ala Glu Pro Leu Asn Ser Phe Leu Gln Leu
 130 135 140
 Leu Ala Gln Tyr Met Glu Met Asn Leu Tyr Asp Leu Ser Leu Tyr Ile
 145 150 155 160
 Ala Lys Gln Arg Glu Leu Phe Tyr Ile Leu Asn Ser Val Tyr Asn Glu
 165 170 175
 Gln Glu Leu Ala Ile Leu Phe Ser Ser Leu Thr Glu Gln Ser Ser Arg
 180 185 190
 Phe Lys Glu Gln Ile Leu Glu Asn Tyr Leu Ser Ala Lys Asn Val Gly
 195 200 205
 Glu Leu Ala Ser Leu Leu Gly Tyr Gly Val Thr Asn Phe Arg Ala Lys
 210 215 220
 Phe Lys Glu Gln Phe Gly Val Ser Val Tyr Arg Trp Leu Leu Asn Arg
 225 230 235 240
 Lys Ser Gln His Ile Ile Tyr Arg Ile Thr Val Tyr Gly Asp Glu Phe
 245 250 255
 Ser Gln Ile Ile Asp Asp Phe Gly Phe Ser Ser Pro Ser His Phe Asn
 260 265 270
 Lys Phe Cys Arg Ser Gln Tyr Gly Leu Thr Pro Cys Glu Leu Arg Lys
 275 280 285
 Lys Leu Lys Thr Asn Asn Asn Ser
 290 295

<210> 6165

<211> 330

<212> PRT

<213> B.fragilis

<400> 6165

Gln Glu Val Thr Ser Val Ile Ser Pro Cys Ile Ile Phe Asn Asn Arg
 1 5 10 15
 Ile Gly Met Asn Lys Phe Ile Tyr Ile Phe Val Ala Ile Val Ala Ile
 20 25 30
 Ser Phe Ala Ser Cys Thr Gln Glu Arg Ala Lys Glu Lys Glu Leu Lys
 35 40 45
 Val Leu Ser Trp Asn Val Trp His Ala Gly His Ala Lys Asn Tyr Pro
 50 55 60
 Glu Lys Gly Cys Glu Gly Thr Ile Gly Ile Leu Arg Lys Ser Gln Ala
 65 70 75 80
 Asp Val Ile Leu Met Ile Glu Thr Tyr Gly Ala Ala Pro Met Val Ala
 85 90 95
 Asp Ser Leu Gly Tyr Asp Tyr Val Leu Leu Ser Asp Asn Leu Cys Ile
 100 105 110
 Tyr Ser Arg Tyr Pro Ile Lys Lys Thr Tyr Leu Phe Pro Asp Ser Ile
 115 120 125

Ser Thr Phe Asn Phe Gly Gly Val Glu Ile Asp Met Asp Gly Thr Pro
 130 135 140
 Val Arg Leu Phe Asp Thr Trp Leu His Tyr Leu Pro Asp Met Arg Leu
 145 150 155 160
 Val Pro Thr Glu Gln Ser Glu Thr Asp Ile Leu Ala Trp Asp Asp Ala
 165 170 175
 Gly Thr Arg Asp Asn Glu Ile Arg Arg Ile Leu Ser Val Leu Gln Pro
 180 185 190
 Met Ile Arg Gln Thr Asp Ser Ile Pro Met Ile Met Gly Gly Asp Phe
 195 200 205
 Asn Val His Ser His Leu Asp Trp Thr Asp Ala Thr Lys Asp Met Tyr
 210 215 220
 His His Gly Gly Ala Val Val Glu Trp Thr Val Ser Lys Glu Met Gln
 225 230 235 240
 Asn Ala Gly Phe Lys Asp Ser Phe Arg Glu Ile His Pro Glu Pro Glu
 245 250 255
 Lys Asn Ile Gly Thr Thr Trp Ile Tyr Asp Asn Glu Asp Lys Pro Leu
 260 265 270
 Arg Ser Asp Arg Ile Asp Phe Ile Tyr Tyr Gln Gly Lys Thr Ile Arg
 275 280 285
 Ala Ile Thr Ser Glu Ser Tyr Asn Gln Glu Leu Thr Lys Pro Leu Lys
 290 295 300
 Phe Met Gly Glu Glu Phe Phe Tyr Pro Ser Asp His Gly Phe Val Met
 305 310 315 320
 Thr Thr Phe Lys Ile Ser Pro Leu Glu Lys
 325 330

<210> 6166

<211> 431

<212> PRT

<213> B.fragilis

<400> 6166

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205

Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
 275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
 290 295 300
 Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
 305 310 315 320
 Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
 325 330 335
 Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
 340 345 350
 Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
 355 360 365
 Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
 370 375 380
 Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
 385 390 395 400
 Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
 405 410 415
 Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
 420 425 430

<210> 6167
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 6167
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 6168
 <211> 179
 <212> PRT
 <213> B.fragilis

<400> 6168
 Arg Thr Ile Asn Ala Val Tyr Met Lys Lys His Phe Val Trp Leu Leu
 1 5 10 15
 Leu Leu Phe Pro Leu Leu Leu Thr Gly Cys Tyr Gly Glu Glu Asp Lys
 20 25 30
 Glu Lys Asp Gln Gly Asp Tyr Ile Trp Asp Phe Ile Asn Tyr Asn Ile

[illegible]

<400> 6169

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<210> 6170
<211> 711
<212> PRT
<213> B.fragilis
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<400> 6170

Ile	Phe	Tyr	Lys	Asp	Met	Asn	Lys	Phe	Lys	Trp	Arg	Ser	Phe	Leu	Ser
1				5					10					15	
Phe	Phe	Leu	Thr	Glu	Arg	Asn	Ile	Arg	Leu	Val	Arg	Leu	Met	Ser	Phe
			20					25					30		
Ile	Leu	Phe	Leu	Phe	Val	Phe	Gln	Gly	Val	Tyr	Ala	Gln	Gln	Thr	Arg
		35					40					45			
Ile	Asn	Leu	His	Val	Lys	Gln	Val	Pro	Leu	Lys	Gln	Val	Leu	Lys	Ser
	50					55					60				
Ile	Glu	Ser	Lys	Ser	Glu	Tyr	Thr	Phe	Phe	Tyr	Asn	Asp	Ala	Glu	Ile
65					70					75				80	
Asp	Met	Asn	Arg	Lys	Val	Thr	Val	Gln	Ala	Asn	Asn	Glu	Arg	Ile	Asp
				85					90					95	
Val	Ile	Leu	Ser	Lys	Ile	Leu	Pro	Asp	Cys	Lys	Cys	Val	Val	Glu	Asn
			100					105					110		

Arg	Lys	Ile	Ile	Leu	Val	Pro	Gly	Ala	Glu	Lys	Gln	Asn	Thr	Pro	Asn	
	115						120					125				
Asp	Asn	Thr	Ala	Lys	Thr	Lys	Glu	Ile	Thr	Gly	Thr	Val	Thr	Asp	Thr	
	130					135					140					
Arg	Gly	Glu	Thr	Leu	Ile	Gly	Val	Asn	Val	Thr	Val	Leu	Gly	Thr	Thr	
145					150					155						160
Thr	Gly	Val	Ile	Thr	Asn	Ile	Asp	Gly	Lys	Tyr	Ser	Leu	Lys	Val	Pro	
			165						170					175		
Ala	Gly	Lys	Ser	Leu	Lys	Phe	Ser	Tyr	Val	Gly	Tyr	Ile	Ala	Gln	Thr	
			180					185					190			
Val	Lys	Val	Gly	Asp	Lys	Ser	Val	Ile	Asp	Ile	Val	Leu	Glu	Glu	Asn	
		195					200					205				
Ser	Lys	Ala	Leu	Asp	Glu	Val	Val	Val	Val	Gly	Tyr	Ala	Val	Gln	Lys	
	210					215					220					
Lys	Val	Asn	Leu	Ser	Gly	Ser	Val	Ala	Thr	Val	Ser	Thr	Lys	Ala	Ile	
225					230					235					240	
Glu	Asp	Arg	Pro	Val	Leu	Asn	Met	Gly	Gln	Ala	Leu	Gln	Gly	Ala	Val	
				245					250					255		
Ala	Asn	Leu	Asn	Val	Ser	Val	Gly	Asp	Gly	Glu	Ala	Asp	Asp	Ser	Pro	
		260						265					270			
Ser	Tyr	Asn	Ile	Arg	Gly	Thr	Thr	Ser	Leu	Asn	Gly	Gly	Ser	Pro	Leu	
	275					280						285				
Val	Val	Ile	Asp	Gly	Val	Val	Ser	Thr	Ser	Asp	Gln	Leu	Asn	Arg	Met	
	290					295					300					
Asn	Pro	Val	Asp	Ile	Ala	Asn	Ile	Ser	Val	Leu	Lys	Asp	Ala	Ala	Ser	
305					310					315					320	
Ser	Ala	Ile	Tyr	Gly	Ser	Arg	Ala	Ala	Phe	Gly	Val	Ile	Leu	Val	Thr	
				325					330					335		
Thr	Lys	Asp	Gly	Ser	Asn	Glu	Lys	Leu	Thr	Val	Asn	Tyr	Asn	Asn	Asn	
		340						345					350			
Phe	Val	Leu	Arg	Thr	Asn	Thr	Arg	Met	Pro	Glu	Ile	Ile	Thr	Asp	Pro	
	355					360						365				
Tyr	Leu	Val	Ala	Thr	Thr	Arg	Asn	Thr	Met	Ala	Tyr	Pro	Trp	Tyr	Asn	
	370					375					380					
Leu	Tyr	Asn	Glu	Glu	Gln	Leu	Ala	Tyr	Ala	Lys	Lys	Cys	Ser	Glu	Asp	
385					390					395					400	
Pro	Ser	Thr	Ser	Pro	Tyr	Phe	Leu	Asn	Pro	Asp	Gly	Phe	Tyr	Thr	Tyr	
				405					410					415		
Phe	Gly	Arg	Thr	Asn	Trp	Val	Asp	Glu	Ala	Tyr	Asn	Asp	Val	Gly	Phe	
			420					425					430			
Ser	Thr	Ile	His	Asn	Ile	Asp	Ile	Ser	Gly	Lys	Thr	Asp	Arg	Ile	Ser	
		435					440					445				
Tyr	Tyr	Phe	Ser	Gly	Gly	Tyr	Asn	Arg	Gln	Asn	Gly	Met	Phe	Lys	Tyr	
	450					455					460					
Gly	Asn	Asp	Ile	Tyr	Asn	Arg	Tyr	Asn	Leu	Arg	Thr	Lys	Leu	Gln	Phe	
465					470					475					480	
Lys	Leu	Thr	Asp	Trp	Trp	Ser	Leu	Asn	Ser	Asn	Val	Ser	Leu	Thr	Thr	
				485					490					495		
Ser	Asp	Tyr	Asp	Tyr	Ala	Asn	Ala	Met	Thr	Asn	Thr	Tyr	Lys	Gln	Met	
		500						505					510			
Tyr	Arg	Lys	Asn	Pro	Met	Asp	Met	Val	Lys	Asn	Pro	Asp	Gly	Thr	Trp	
	515						520						525			
Thr	Asp	Ala	Ser	Val	Gly	Thr	Leu	Gly	Ala	Leu	Ala	Glu	Gly	Gly	Arg	
	530					535					540					
Ala	Thr	Asp	Trp	Lys	Thr	Asn	Thr	Asn	Ile	Asn	Leu	Ser	Thr	Lys	Ile	
545					550					555					560	
Asp	Val	Ile	Lys	Asp	Val	Phe	Phe	Val	Gln	Gly	Thr	Phe	Ala	Phe	Ser	
				565					570					575		
Asn	Thr	Lys	Thr	Arg	Ser	Asn	Trp	Tyr	Asn	Leu	Pro	Val	Thr	Tyr	Arg	

115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575

			580					585					590				
Asn	Gly	Pro	Glu	Leu	Pro	Val	Leu	Thr	Phe	Asn	Pro	Ile	Ser	Thr	Val		
		595					600					605					
Ser	Asp	Ala	Ser	Ser	Ser	Asn	Ser	Asp	Thr	Lys	His	Ile	Leu	Phe	Asp		
	610					615					620						
Val	Tyr	Gly	Thr	Phe	Gln	Lys	Thr	Phe	Ala	Lys	Lys	His	Ala	Val	Thr		
625					630					635					640		
Ala	Val	Val	Gly	Phe	Asn	Gln	Glu	Glu	Tyr	Lys	Tyr	Asp	Tyr	Val	Lys		
				645					650					655			
Ala	Asn	Arg	Lys	Glu	Leu	Ile	Ser	Ser	Ser	Leu	Pro	Thr	Ile	Asn	Leu		
			660					665					670				
Ala	Thr	Gly	Asp	Met	Asn	Met	Ser	Gln	Ser	Ile	Thr	Thr	Trp	Ala	Leu		
		675					680					685					
Arg	Gly	Ala	Phe	Ala	Arg	Leu	Gly	Tyr	Ile	Tyr	Asn	Asp	Lys	Tyr	Ile		
	690					695					700						
Phe	Glu	Phe	Asn	Gly	Arg	Leu											
705						710											

<210> 6171

<211> 511

<212> PRT

<213> B.fragilis

<400> 6171

Leu	Phe	Met	Lys	Lys	Asn	Leu	Leu	Tyr	Leu	Phe	Ala	Leu	Ile	Cys	Ser		
1				5					10					15			
Val	Ser	Leu	Leu	Val	Ala	Cys	Asn	Asp	Asp	Asp	Pro	Glu	Tyr	Ile	Gln		
			20					25					30				
Asp	Gly	Glu	Phe	Asp	Gly	Val	Tyr	Leu	Gly	Thr	Leu	Asp	Val	Asp	Ala		
		35					40					45					
Ala	Gly	Val	Ile	Lys	Val	Asp	Asp	Ile	Pro	Gln	Lys	Val	Tyr	Ile	Thr		
	50					55					60						
Lys	Thr	Gly	Glu	Asn	Gln	Phe	Lys	Met	Glu	Leu	Lys	Asn	Phe	Ser	Phe		
65					70					75					80		
Gln	Thr	Met	Glu	Leu	Gly	Asn	Ile	Ser	Val	Asp	Asn	Ile	Ala	Val	Ile		
				85					90					95			
Lys	Lys	Gly	Asn	Ser	Cys	Thr	Phe	Ser	Gly	Lys	Ala	Asn	Leu	Thr	Leu		
			100					105					110				
Ala	Val	Gly	Ala	Cys	Asp	Val	Thr	Val	Ser	Gly	Thr	Ile	Glu	Asp	Asn		
		115					120					125					
Lys	Leu	Asp	Met	Asp	Ile	Ala	Val	Val	Ala	Ala	Gly	Thr	Leu	Asn	Val		
	130					135					140						
Ala	Val	Asp	Phe	Glu	Gly	Thr	Lys	Leu	Ala	Ala	Asp	Lys	Ser	Ser	Glu		
145					150					155					160		
Ala	Lys	Ile	Leu	Thr	Phe	Thr	Phe	Ala	Asn	Glu	Phe	Val	Thr	Ser	Gln		
				165					170						175		
Pro	Val	Ile	Asp	Ser	Glu	Asn	Lys	Thr	Ile	Thr	Phe	Val	Val	Ser	Asp		
			180					185						190			
Gln	Met	Pro	Glu	Glu	Gln	Leu	Lys	Ala	Leu	Ile	Pro	Glu	Phe	Thr	Ile		
		195					200					205					
Ser	Glu	Gly	Ala	Ser	Val	Asp	Lys	Lys	Ser	Gly	Val	Ala	Gln	Asp	Phe		
	210					215					220						
Ser	Gln	Pro	Val	Thr	Tyr	Thr	Val	Thr	Ser	Glu	Asp	Gly	Ile	Val	Lys		
225					230					235					240		
Met	Val	Tyr	Thr	Val	Ser	Val	Ser	Gly	Lys	Glu	Lys	Tyr	Leu	Ser	Phe		
				245				250						255			
Asn	Glu	Trp	Glu	Thr	Ile	Lys	Ser	Ser	Thr	Ser	Gly	Ser	Leu	Glu	Gln		
		260						265					270				
Tyr	Gln	Asn	Pro	Lys	Gly	Thr	Tyr	Gly	Thr	Ser	Asn	Pro	Gly	Val	Met		

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275	280	285
Thr Ile Asn Glu Met Phe Gly	Gln Val Gly Ile Pro Ser Phe Glu Tyr	
290	295	300
Cys Val Ala Pro Val Asp Gly	Arg Val Gly Lys Ala Ala Gln Leu Lys	
305	310	315
Thr Leu His Thr Ala Ile Val Ala Asn Gly	Ile Asp Tyr Asn Ala Ala	
325	330	335
Phe Gly Gly Leu Ile Pro Tyr Ile Thr Ala Gly	Ser Leu Phe Thr Gly	
340	345	350
Thr Phe Lys Thr Asp Met Phe Asn Pro Leu Asn Ser	Thr Lys Phe Gly	
355	360	365
Val Pro Phe Val Gly Glu Pro Val Thr Phe Thr Gly	Trp Tyr Lys Tyr	
370	375	380
Ala Pro Gly Glu Ile Tyr Tyr Asp Asn Thr Asn Lys	Ile Val Glu Gly	
385	390	395
Gln Thr Asp Lys Cys Ser Ile Tyr Ala Val Leu Tyr	Glu Glu Ser Leu	
405	410	415
Asp Ser Lys Gly Asn Asn Ile Pro Leu Thr Gly	Asp Tyr Lys Asn Lys	
420	425	430
Glu Val Tyr Ile Gly Ser Ser Ser Arg Val Val Met	Lys Ala Glu Leu	
435	440	445
Ser Asp Gly Ser Ala Lys Ala Glu Trp Thr Gln Phe	Ser Val Pro Phe	
450	455	460
Lys Pro Val Gly Asp Asn Lys Tyr Asp Ala Asn Lys	Lys Tyr Tyr Val	
465	470	475
Ala Val Ile Cys Ser Ser Ser Phe Glu Gly Asp Tyr	Tyr Lys Gly Ala	
485	490	495
Pro Gly Ser Thr Leu Ile Val Asp Asp Phe Ser	Ile Leu Ser Lys	
500	505	510

<210> 6172
 <211> 267
 <212> PRT
 <213> B.fragilis

<400> 6172

Leu Leu Lys Lys Gln Met Lys Lys Tyr Lys Phe Phe Ile Ala Ile Leu	
1 5 10 15	
Thr Phe Ser Ile Leu His Ser Ile Ser Val Lys Ala Gln Glu Arg	
20 25 30	
Asn Lys Gly Ile Ile Trp Ser Ser Leu Arg Gly Leu Glu Tyr Glu Val	
35 40 45	
Lys Ala Gly Phe Ser Ile Gly Gly Thr Ser Pro Leu Pro Leu Pro Lys	
50 55 60	
Glu Ile Arg Ser Ile Asp Ser Tyr Asn Pro Asn Met Ala Ile Ala Ile	
65 70 75 80	
Glu Gly Asn Ala Thr Lys Trp Phe Gly Ser Asp Lys Lys Trp Gly Met	
85 90 95	
Leu Leu Gly Leu Arg Leu Glu Asn Lys Ser Met Thr Thr Lys Ala Thr	
100 105 110	
Val Lys Asn Tyr Asn Met Glu Ile Ile Gly Asp Gly Gly Glu Lys Val	
115 120 125	
Ser Gly Val Trp Thr Gly Gly Val Lys Thr Lys Val Lys Asn Ser Tyr	
130 135 140	
Leu Thr Ile Pro Ile Leu Ala Lys Tyr Lys Leu Thr Lys Arg Trp Asn	
145 150 155 160	
Leu Thr Val Gly Pro Tyr Phe Ser Tyr Met Leu Glu Gly Asp Phe Ser	
165 170 175	
Gly Asn Val Tyr Glu Gly Tyr Leu Arg Lys Thr Asp Pro Thr Gly Pro	

			180					185					190				
Lys	Val	Glu	Phe	Thr	Asp	Gly	Lys	Val	Ala	Thr	Tyr	Asp	Phe	Ser	Asn		
		195						200				205					
Asp	Leu	Arg	Lys	Phe	Gln	Trp	Gly	Met	Gln	Leu	Gly	Gly	Glu	Trp	Lys		
	210					215					220						
Ala	Phe	Lys	His	Leu	Asn	Val	Tyr	Ala	Asp	Leu	Ser	Trp	Gly	Leu	Asn		
225					230					235					240		
Asp	Ile	Phe	Lys	Lys	Asp	Phe	Lys	Thr	Ile	Thr	Phe	Ala	Met	Tyr	Pro		
				245					250					255			
Ile	Tyr	Leu	Asn	Leu	Gly	Phe	Gly	Tyr	Ala	Phe							
			260					265									

<210> 6173

<211> 415

<212> PRT

<213> B.fragilis

<400> 6173

Lys	Val	Tyr	Glu	Pro	Met	Thr	Glu	Trp	Tyr	Ser	Phe	Leu	Lys	Leu	Arg		
1				5					10					15			
Gly	Ser	Tyr	Gly	Ser	Leu	Gly	Asn	Gln	Asp	Val	Asp	Ala	Tyr	Ala	Tyr		
			20					25					30				
Leu	Ala	Thr	Met	Gly	Ser	Gly	Lys	Ile	Ser	Gln	Ile	Leu	Asp	Lys	Gln		
			35				40					45					
Gln	Pro	Val	Tyr	Val	Gly	Ala	Pro	Gly	Leu	Val	Ala	Gly	Asn	Leu	Thr		
	50					55					60						
Trp	Glu	Lys	Val	Thr	Thr	Thr	Asn	Leu	Ala	Leu	Asp	Ala	Asn	Phe	Phe		
65					70					75					80		
Asp	Asn	Arg	Leu	Ser	Ile	Thr	Gly	Glu	Val	Tyr	Val	Arg	Arg	Thr	Lys		
				85					90					95			
Asp	Met	Leu	Thr	Pro	Gly	Val	Thr	Leu	Pro	Ser	Val	Leu	Gly	Thr	Asp		
			100					105					110				
Val	Pro	Lys	Gln	Asn	Ala	Ala	Asp	Leu	Lys	Thr	Glu	Gly	Trp	Glu	Leu		
		115					120					125					
Thr	Val	Gly	Trp	Lys	Asp	Gln	Phe	Lys	Leu	Ala	Gly	Lys	Pro	Phe	Tyr		
	130					135						140					
Tyr	Asp	Val	Asn	Phe	Asn	Leu	Ala	Asp	Ser	Arg	Ala	Tyr	Ile	Thr	Lys		
145					150					155					160		
Tyr	Glu	Asn	Pro	Lys	Gly	Leu	Leu	Gly	Asp	Tyr	Tyr	Val	Gly	Lys	Glu		
				165					170					175			
Ile	Gly	Glu	Ile	Trp	Gly	Val	Glu	Thr	Leu	Gly	Phe	Phe	Thr	Ser	Glu		
			180					185					190				
Glu	Asp	Ile	Lys	Asn	His	Ala	Asp	Gln	Ser	Trp	Cys	Thr	Ser	Tyr	Pro		
		195					200					205					
Gly	Thr	Arg	Pro	Leu	Ala	Pro	Gly	Asp	Leu	Lys	Phe	Lys	Asp	Glu	Asn		
	210					215					220						
Lys	Asp	Gly	Lys	Ile	Thr	Asp	Gly	Ala	Trp	Thr	Leu	Glu	Asp	His	Gly		
225					230					235				240			
Asp	Tyr	Lys	Ile	Ile	Gly	Asn	Ser	Arg	Ala	Arg	Tyr	Thr	Phe	Gly	Leu		
				245					250					255			
Ser	Ala	Asn	Ala	Gln	Trp	Asn	Gly	Phe	Asp	Leu	Ser	Leu	Phe	Ala	Gln		
		260						265					270				
Gly	Val	Gly	Lys	Lys	Asp	Tyr	Tyr	Pro	Gly	Thr	Gly	Asp	Leu	Tyr	Phe		
		275					280					285					
Trp	Gly	Ile	Tyr	Ala	Gln	Pro	Trp	Thr	Asn	Ile	Thr	Lys	Gly	Asn	Met		
	290					295					300						
Tyr	Asp	His	Trp	Thr	Glu	Glu	Asn	Pro	Asp	Ala	Tyr	Phe	Pro	Arg	Met		
305					310					315					320		
Lys	Ala	Tyr	Val	Ala	Glu	Asn	Thr	Asp	Arg	Glu	Cys	Gly	Val	Val	Gln		

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<210> 6174
<211> 201
<212> PRT
<213> B.fragilis
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<210> 6175
<211> 460
<212> PRT
<213> B.fragilis
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<400> 6175
Asn His Ser Leu Ile Arg Ile Gly Tyr Ser Leu Val Lys Trp Met Val
1                               5               10              15
Tyr Lys Ser Ile Phe Pro Thr Phe Val Gln Asn Ile Asn Leu Gly Gln
                20                   25                 30
Met Thr Glu Ser Glu Arg Lys Gln Ile Ile Ala Leu Ile Gln Arg Glu
            35                  40                      45
Val Ile Pro Ala Ile Gly Cys Thr Glu Pro Ile Ala Val Ala Leu Cys
        50                55                    60
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Val	Ala	Lys	Ala	Thr	Glu	Thr	Leu	Gly	Ala	Lys	Pro	Glu	Lys	Ile	Lys
65					70					75					80
Val	Leu	Leu	Ser	Ala	Asn	Ile	Leu	Lys	Asn	Ala	Met	Gly	Val	Gly	Ile
				85					90					95	
Pro	Gly	Thr	Gly	Met	Ile	Gly	Leu	Pro	Ile	Ala	Met	Ala	Leu	Gly	Ala
			100					105					110		
Leu	Ile	Gly	Lys	Ser	Asp	Tyr	Gln	Leu	Glu	Val	Leu	Lys	Asp	Ser	Thr
		115					120					125			
Pro	Glu	Ala	Val	Glu	Glu	Gly	Lys	Lys	Leu	Ile	Asp	Glu	Lys	Arg	Ile
	130					135					140				
Cys	Ile	Ser	Leu	Lys	Glu	Asp	Ile	Thr	Glu	Lys	Leu	Tyr	Ile	Glu	Val
145					150					155					160
Thr	Cys	Glu	Ala	Gly	Gly	Glu	Gln	Ala	Thr	Ala	Ile	Ile	Ser	Gly	Gly
				165					170					175	
His	Thr	Thr	Phe	Val	Tyr	Val	Ala	Lys	Gly	Asp	Glu	Val	Leu	Leu	Asn
			180					185					190		
Lys	Gln	Gln	Thr	Ser	Gly	Glu	Glu	Glu	Glu	Glu	Glu	Thr	Leu	Glu	Leu
	195						200					205			
Thr	Leu	Arg	Lys	Val	Tyr	Asp	Phe	Ala	Leu	Thr	Ala	Pro	Leu	Asp	Glu
	210					215					220				
Ile	Arg	Phe	Ile	Leu	Glu	Thr	Ala	Arg	Leu	Asn	Lys	Lys	Ala	Ala	Glu
225					230					235					240
Gln	Ser	Phe	Gln	Gly	Asp	Tyr	Gly	His	Ala	Leu	Gly	Lys	Met	Leu	Arg
			245					250					255		
Gly	Thr	Tyr	Glu	His	Lys	Ile	Met	Gly	Asp	Ser	Val	Phe	Ser	His	Ile
			260					265					270		
Leu	Ser	Tyr	Thr	Ser	Ala	Ala	Cys	Asp	Ala	Arg	Met	Ala	Gly	Ala	Met
		275					280					285			
Ile	Pro	Val	Met	Ser	Asn	Ser	Gly	Ser	Gly	Asn	Gln	Gly	Ile	Ser	Ala
	290					295					300				
Thr	Leu	Pro	Val	Val	Val	Tyr	Ala	Glu	Glu	Asn	Gly	Lys	Ser	Glu	Glu
305					310					315					320
Glu	Leu	Ile	Arg	Ala	Leu	Met	Met	Ser	His	Leu	Thr	Val	Ile	Tyr	Ile
			325						330					335	
Lys	Gln	Ser	Leu	Gly	Arg	Leu	Ser	Ala	Leu	Cys	Gly	Cys	Val	Val	Ala
			340					345					350		
Ala	Thr	Gly	Ser	Ser	Cys	Gly	Ile	Thr	Trp	Leu	Met	Gly	Gly	Ser	Tyr
		355					360					365			
Lys	Gln	Val	Ala	Phe	Ala	Val	Gln	Asn	Met	Ile	Ala	Asn	Leu	Thr	Gly
					375						380				
Met	Ile	Cys	Asp	Gly	Ala	Lys	Pro	Ser	Cys	Ala	Leu	Lys	Val	Thr	Thr
385					390					395					400
Gly	Val	Ser	Thr	Ala	Val	Leu	Ser	Ala	Val	Met	Ala	Met	Glu	Asn	Arg
				405					410					415	
Cys	Val	Thr	Ser	Val	Glu	Gly	Ile	Ile	Asp	Glu	Asp	Val	Asp	Gln	Ser
			420						425				430		
Ile	Arg	Asn	Leu	Thr	Arg	Ile	Gly	Ser	Gln	Gly	Met	Asn	Glu	Thr	Asp
		435					440					445			
Arg	Val	Val	Leu	Asp	Ile	Met	Thr	His	Lys	Gly	Cys				
	450					455					460				

<210> 6176

<211> 354

<212> PRT

<213> B.fragilis

<400> 6176

Ile	Arg	Gly	Leu	Ile	Ala	Val	Ser	Gly	Leu	Trp	Glu	His	Leu	Tyr	Ser
1				5					10					15	

Gln Ala Trp Gln Leu Val Val Thr Val Cys Leu Leu Pro Ile Leu Ala
 20 25 30
 Val Ile Phe Ile Ile Leu Ser Tyr Thr Ile Lys Cys Ile Tyr Lys Met
 35 40 45
 Lys Lys Ile Ser Ile Leu Phe Ile Phe Ser Leu Ile Leu Gly Leu Phe
 50 55 60
 Val Ser Glu Val Ser Ala Ala Gly Pro Arg Leu Lys Gln Arg Pro Lys
 65 70 75 80
 His Val Val Leu Val Ala Phe Asp Gly Leu Ser Ala Val Ala Ile Arg
 85 90 95
 Asn His Pro Met Pro Asn Phe Asn Arg Leu Met Lys Glu Gly Ala Ser
 100 105 110
 Thr Leu Asn Asn Arg Ser Ile Leu Pro Ser Ser Ser Ala Pro Asn Trp
 115 120 125
 Ala Ser Met Phe Thr Gly Val Gly Pro Glu Leu His Gly Tyr Thr Thr
 130 135 140
 Trp Gly Ser Lys Thr Pro Glu Ile Pro Pro Phe Ile Thr Asn Gln Tyr
 145 150 155 160
 Gly Arg Phe Pro Gly Leu Tyr Gly Leu Leu Arg Asp Thr His Pro Lys
 165 170 175
 Ala Glu Leu Gly Tyr Ile Tyr Glu Trp Asp Gly Met Lys Tyr Leu Val
 180 185 190
 Asp Ser Leu Ala Ile Asn His Phe Val His Ala Pro Gln Thr Lys Asp
 195 200 205
 His Pro Lys Gly Ala Thr Gln Phe Ala Val Asn Tyr Leu Lys Glu Lys
 210 215 220
 Lys Pro Met Tyr Cys Ala Val Ile Phe Glu Tyr Pro Asp His Thr Gly
 225 230 235 240
 His Thr Tyr Lys Trp Glu Ser Lys Glu Tyr Tyr Glu Lys Leu Asp Glu
 245 250 255
 Leu Asp Gly Tyr Leu Gly Glu Ile Val Ala Ala Ile Glu Glu Ala Asp
 260 265 270
 Met Met Asp Glu Thr Val Ile Ile Leu Thr Ala Asp His Gly Gly Ile
 275 280 285
 Gly Thr Asn His Gly Gly Lys Thr Leu Asn Glu Met Glu Thr Pro Leu
 290 295 300
 Val Phe Tyr Gly Lys Gly Val Lys Lys Asn Tyr Lys Ile Thr Glu Ser
 305 310 315 320
 Thr Met Val Ile Asp Val Pro Ala Thr Glu Ala Trp Leu Leu Gly Val
 325 330 335
 Glu Pro His Glu Ala Trp Leu Gly Asn Pro Val Thr Thr Ala Phe Phe
 340 345 350
 Thr Lys

<210> 6177

<211> 63

<212> PRT

<213> B.fragilis

<400> 6177

Leu Val Ile Phe Asn Phe His Ser Lys Thr Glu Gln Ser Asn Ser Phe
 1 5 10 15
 Ile Ser Ile Gln Thr Arg Ser Ile Leu Arg Ile Leu Cys Ser Lys Phe
 20 25 30
 Lys Ile Lys Leu Val Ile Glu Arg Asn Arg Ile Lys Lys Lys Leu Ile
 35 40 45
 Tyr Asp Ser Asn Arg Ala Asn Ile Ile Tyr Leu His His His Leu
 50 55 60

<210> 6178
 <211> 559
 <212> PRT
 <213> B.fragilis

<400> 6178

Ser	Gly	Ser	Leu	Gln	Ser	Ser	Gly	Glu	Tyr	Ser	Asn	Ile	Ile	Ile	Thr
1				5					10					15	
Ser	Ala	Tyr	Ala	Asp	Leu	Thr	Gly	Leu	Asp	Asn	Pro	Trp	Pro	Ala	Val
			20					25					30		
Ser	Asp	Glu	Leu	Lys	Ser	Ala	Gln	Asn	Asn	Val	Lys	Thr	Ile	Pro	Thr
		35					40					45			
Ile	Gly	Tyr	His	Ala	Gly	Ser	Ala	Thr	Leu	Ser	Arg	Trp	Ser	Leu	Tyr
	50					55					60				
Lys	Gln	Ile	Arg	Gln	Ala	Asn	Glu	Phe	Ile	Ala	Tyr	Ala	His	Val	Ile
65					70				75						80
Pro	Gln	Asn	Gly	Asp	Val	Ala	Asp	Phe	Ile	Asp	Glu	Lys	Glu	Leu	Ala
				85				90						95	
Leu	Leu	Lys	Asn	Glu	Ala	Arg	Phe	Leu	Arg	Ala	Tyr	Tyr	His	Tyr	Leu
			100					105					110		
Leu	Phe	Glu	Leu	Tyr	Gly	Pro	Ile	Pro	Ile	Met	Thr	Glu	Ile	Ala	Asp
		115					120					125			
Pro	Ser	Ala	Ala	Asp	Leu	Asp	Tyr	Tyr	Arg	Asn	Leu	Val	Asp	Glu	Val
						135					140				
Val	Ala	Phe	Ile	Asp	Lys	Glu	Leu	Asn	Glu	Cys	Tyr	Asp	Leu	Leu	Pro
145					150					155					160
Glu	Lys	Glu	Leu	Asn	Pro	Asp	Gly	Thr	Ile	Asn	Asn	Glu	Arg	Ala	Ala
				165					170					175	
Ala	Pro	Thr	Lys	Gly	Ala	Ala	Leu	Ala	Ile	Leu	Ala	Lys	Leu	His	Val
			180					185					190		
Tyr	Ala	Ala	Ser	Pro	Leu	Phe	Asn	Gly	Gly	Tyr	Pro	Glu	Ala	Ile	Ala
		195					200					205			
Leu	Lys	Asp	Asn	Gln	Gly	Lys	Gln	Leu	Phe	Pro	Ala	Lys	Asp	Asp	Thr
	210				215						220				
Lys	Trp	Lys	Thr	Ala	Leu	Asp	Ala	Leu	Gln	Arg	Phe	Ile	Asp	Tyr	Ser
225					230					235					240
Lys	Gly	Arg	Tyr	Ser	Leu	Tyr	Gln	Val	Met	Lys	Asn	Gly	Glu	Ile	Asp
				245					250					255	
Pro	Ala	Glu	Ser	Leu	Tyr	Gln	Leu	Phe	Gln	Val	Ser	Val	Asn	Asn	Ser
			260					265					270		
Glu	Ala	Val	Trp	Gln	Ser	Ser	Lys	Asn	Ser	Trp	Gly	Gly	Val	Asn	Gly
		275					280					285			
Glu	Gly	Arg	Glu	Arg	Arg	Cys	Thr	Pro	Arg	Ala	Ile	Phe	Ser	Gly	Phe
	290					295				300					
Ser	Cys	Val	Gly	Val	Leu	Gln	Glu	Ala	Ile	Asp	Asp	Phe	Leu	Met	Ser
305					310					315					320
Asp	Gly	Lys	Ser	Ile	Glu	Glu	Ser	Gly	Leu	Tyr	Lys	Glu	Glu	Gly	Ile
				325					330					335	
Gly	Glu	Asp	Gly	Ile	Pro	Asn	Met	Tyr	Lys	Asn	Arg	Glu	Pro	Arg	Phe
			340					345					350		
Tyr	Gln	Asp	Ile	Thr	Tyr	Ser	Gly	Lys	Val	Trp	Gln	Lys	Thr	Asp	Lys
		355					360					365			
Lys	Ile	Tyr	Phe	Tyr	Lys	Gly	Met	Pro	Asp	Asp	Asn	Ser	Lys	Ala	Asp
	370					375					380				
Met	Ser	Tyr	Ser	Gly	Tyr	Leu	Leu	Tyr	Lys	Gly	Met	Asn	Arg	Asp	Leu
385					390					395					400
Leu	Asn	Gln	Gly	Asn	Asn	Pro	Lys	Ser	Lys	Tyr	Arg	Ala	Gly	Met	Leu
				405					410					415	

Phe Arg Leu Ala Asp Phe Tyr Leu Leu Tyr Ala Glu Ala Leu Asn His
 420 425 430
 Val Asn Pro Gly Asp Ala Arg Ile Ile Gln Tyr Val Asp Ser Val Arg
 435 440 445
 Tyr Arg Ala Gly Ile Pro Leu Leu Lys Asp Ile Lys Pro Gly Ile Ile
 450 455 460
 Gly Asn Arg Glu Leu Gln Glu Lys Ala Ile Arg His Glu Arg Arg Ile
 465 470 475 480
 Glu Leu Phe Ala Glu Gly Gln Arg Tyr Phe Asp Val Arg Arg Trp Met
 485 490 495
 Cys Ala Glu Glu Glu Gly Tyr Lys Gln Gly Gly Pro Val His Gly Met
 500 505 510
 Asp Met Asn Ala Thr Asp Leu Glu Gly Phe Met Lys Arg Thr Ala Phe
 515 520 525
 Glu Thr Arg Ile Phe Glu Lys Arg Met Tyr Leu Tyr Pro Ile Pro Leu
 530 535 540
 Ala Glu Ile Gln Lys Ser Lys Lys Leu Val Gln Asn Pro Gly Trp
 545 550 555

<210> 6179

<211> 378

<212> PRT

<213> B.fragilis

<400> 6179

Lys Arg Val Met Asn Lys Gly Phe Ile Leu Lys Ala Leu Phe Leu Leu
 1 5 10 15
 Cys Phe Leu Phe Ser Gln Thr Ala Gln Gly Gln Ser Phe Thr Pro Gly
 20 25 30
 Glu Ile Trp Pro Asp Asn His Gln Val His Ile Asn Ala His Gly Gly
 35 40 45
 Gly Ile Leu Tyr Glu Asn Gly Thr Tyr Tyr Trp Phe Gly Glu His Lys
 50 55 60
 Thr Glu Gly Glu Ala Gly Asn Leu Ala Asn Val Gly Val His Cys Tyr
 65 70 75 80
 Ser Ser Asp Asp Leu Tyr His Trp Lys Asp Cys Gly Ile Ala Leu Ser
 85 90 95
 Val Ile Glu Asn Asp Pro Gly His Pro Ile Ser Lys Gly Cys Ile Leu
 100 105 110
 Glu Arg Pro Lys Val Ile Tyr Asn Pro Leu Thr Lys Lys Tyr Val Met
 115 120 125
 Trp Phe His Leu Glu Pro Lys Gly Ala Gly Tyr Ser Gly Ala Leu Ser
 130 135 140
 Gly Ile Ala Leu Ser Asp Arg Val Thr Gly Pro Tyr Thr Phe Leu Lys
 145 150 155 160
 Ala Val Arg Pro Asn Ala Gly Ser Trp Pro Ile Asn Val Leu Pro Ile
 165 170 175
 His Lys Thr Thr Arg Arg Pro Ser Ala Glu Glu Glu Arg Gln Cys Thr
 180 185 190
 Gly Gly Ser Leu Pro Ala His Pro Asp Ser Leu Asn Ile Leu Gly Arg
 195 200 205
 Asp Met Glu Gln Gly Gln Met Ala Arg Asp Met Asn Leu Phe Val Asp
 210 215 220
 Asp Asp Gly Lys Ala Tyr His Ile Tyr Ser Ser Glu Glu Asn Ser Thr
 225 230 235 240
 Leu His Ile Ala Glu Leu Asp Pro Thr Tyr Thr Gly Tyr Thr Gly Lys
 245 250 255
 Tyr Ile Arg Ala Phe Ile Asn Arg Phe Met Glu Ala Pro Ala Met Phe
 260 265 270

2852
 B.fragilis
 6179
 378
 PRT
 6179

Lys Lys Asp Gly Asn Tyr Tyr Leu Ile Met Ser Gly Cys Ser Gly Trp
 275 280 285
 Asn Pro Asn Ala Ala Arg Ser Ala Ile Ala Ser Ser Ile Trp Gly Glu
 290 295 300
 Trp Lys Glu Leu Gly Asn Pro Cys Ile Gly Gln Asp Ala Asp Leu Thr
 305 310 315 320
 Phe His Ser Gln Ser Thr Tyr Ile Leu Pro Val Gln Gly Lys Lys Asn
 325 330 335
 Gln Phe Ile Tyr Met Gly Asp Arg Trp Thr Pro Gln Asn Ala Ile Asp
 340 345 350
 Gly Arg Tyr Ile Trp Leu Pro Ile His Phe Glu Gly Pro Lys Pro Ile
 355 360 365
 Ile Glu Trp Lys Asp Ser Trp Thr Leu Asp
 370 375

<210> 6180

<211> 452

<212> PRT

<213> B.fragilis

<400> 6180

Lys Gln Thr Ile Ile Leu Lys Leu Lys Leu Met Leu Lys Asn His Cys
 1 5 10 15
 Cys Met Gly Thr Gly Cys Arg Arg Ala Ile Leu Phe Leu Leu Phe Phe
 20 25 30
 Pro Leu Phe Gly Thr Gly Phe Ala Gln Thr Glu Thr Pro Val Lys Val
 35 40 45
 Asp Lys Pro Leu Lys Ser Tyr Ser His Trp Tyr Phe Gly Ala Glu Tyr
 50 55 60
 Gly Val Pro Phe Leu Phe Gly Asp Phe Thr Ser Phe Ser Ala Asp Lys
 65 70 75 80
 Asn Tyr Val Gly Ser Gln Phe Gly Gly Phe Ala Gly Tyr Gln Val Asn
 85 90 95
 Ser Trp Ile Gly Ile Glu Ala Ser Ala Arg Thr Gly Tyr Thr Arg Met
 100 105 110
 Gly Ala Lys Ser Tyr Ala Gly Asp Tyr Leu Met Asn Ala Asp Gly Met
 115 120 125
 Thr Tyr Tyr Thr Asn Gln Asp Phe Asn Thr Trp Lys Tyr Lys Asp Val
 130 135 140
 Phe Ser Lys Val His Phe Thr Asn Ile Gly Leu Gln Met Asn Leu Asn
 145 150 155 160
 Val Asn Asn Phe Phe Gly Pro Asn Arg Gly Asn Arg Arg Trp Thr Val
 165 170 175
 Leu Leu Ser Pro Ala Val Tyr Ala Gln His Phe Ser Thr Glu Leu Ile
 180 185 190
 Asn Lys Ala Asp Lys Ser Pro Leu Ser Gly Lys Lys Thr Asp Lys Trp
 195 200 205
 Asn Ile Gly Ile Gly Gly Asp Val Ser Leu Arg Tyr Lys Ile Ser Arg
 210 215 220
 Ala Phe Asp Val Gln Leu Arg Thr Gly Ile Ile Trp Val Asn Asn Asn
 225 230 235 240
 Lys Met Asp Gly Ile Ser Thr Leu Ile Lys Ser Lys Asp His Phe Met
 245 250 255
 Thr Ser Ala Gly Leu Ser Leu Ile Trp Lys Val Gly Lys Lys Lys Glu
 260 265 270
 Asp Asn Val Leu Tyr Ala Ser Arg Arg Ala Ala Asp Val Glu Ile Arg
 275 280 285
 Tyr Ile Glu Glu Arg Ala Val Ser Leu Pro Thr Pro Ala Cys Cys Val
 290 295 300

Glu Asp Ser Ile Glu Lys Glu Arg Met Lys Arg Glu Ile Ala Ser Leu
 305 310 315 320
 Asn Met Gln Leu Gln Gln Ala His Thr Val Val Lys Glu Lys Thr Gly
 325 330 335
 Ser Asp Pro Ile Leu Gly Phe Asn Glu Leu Pro Pro Val Tyr Phe Lys
 340 345 350
 Arg Gly Ser Ala Tyr Leu Asn Val Ala Leu Tyr Lys Asn Glu Leu Cys
 355 360 365
 Arg Ile Val Gln Thr Leu Lys Lys Tyr Pro Glu Leu Lys Val Ile Leu
 370 375 380
 Ser Gly His Ala Asp His Thr Gly Asn Pro Asp Ile Asn Gln Lys Ile
 385 390 395 400
 Ser Leu Gln Arg Ala Glu Ala Leu Ala Ala Tyr Leu Glu Lys Lys Gly
 405 410 415
 Ile Asp Gly Lys Arg Ile Ala Val Lys Gly Glu Cys Ile Asp Met Leu
 420 425 430
 Thr Ser Asp Pro Asn Asn Tyr Ser Val Leu Ala Arg Arg Val Ile Val
 435 440 445
 Glu Ile Gln Lys
 450

<210> 6181

<211> 193

<212> PRT

<213> B.fragilis

<400> 6181

Tyr Phe Lys Met Lys Glu Asn Thr Met Tyr Ser Asn Leu Glu Ser Val
 1 5 10 15
 Glu Gln Leu Phe Arg Gln Tyr Tyr Lys Val Leu Arg Val Tyr Ala Phe
 20 25 30
 Arg Phe Val Asn Asp Trp Asp Ile Ala Glu Asp Val Val Gln Asp Val
 35 40 45
 Phe Val Ala Leu Trp Asn Lys Arg Thr Asp Ile Glu Phe Asp Gly Ala
 50 55 60
 Val Lys Ala Tyr Leu Phe Lys Ala Val Tyr Asn Lys Ser Leu Asn Ile
 65 70 75 80
 Leu Ser Ser Lys Lys Tyr Thr Glu Glu Glu Ser Val Glu Gln Phe Ser
 85 90 95
 Asp Gln Ile Glu Ala Leu Gln Ile Leu Glu Asn Asn Gln Glu Asn Ser
 100 105 110
 Leu Phe Met Lys Glu Leu Gln Ser Glu Ile Glu Thr Phe Ile Glu Thr
 115 120 125
 Leu Pro Thr Gln Val Lys Lys Val Phe Ile Leu Ser Arg Ser Tyr Gly
 130 135 140
 Leu Lys Ile Lys Glu Ile Ser Val Gln Leu Asp Leu Ser Pro Lys Thr
 145 150 155 160
 Val Glu Lys Tyr Leu Thr Arg Ala Leu Leu Glu Leu Arg Thr His Leu
 165 170 175
 Lys Asn Lys Asp Leu Met Ser Leu Leu Phe Leu Leu Tyr Leu Cys Leu
 180 185 190
 Lys

<210> 6182

<211> 377

<212> PRT

<213> B.fragilis

<400> 6182

Asn Pro Lys Met Lys Thr Met Ile Arg Lys Lys Ile Tyr Leu Leu Leu
 1 5 10 15
 Leu Leu Ile Pro Leu Leu His Gly Cys Lys Glu Ser Asp Phe Asn Asp
 20 25 30
 Leu Leu Asp Arg Gln Gly Asp Gln Arg Lys Glu Leu Gln Glu Leu Thr
 35 40 45
 Asp Leu Cys Lys Lys Leu Asn Glu Asp Ile Tyr Asn Leu Gln Val Ile
 50 55 60
 Val Asn Thr Asp Arg Ile Gly Asp Asn Ile Thr His Ile Glu Glu Leu
 65 70 75 80
 Ala Asp Gly Ala Gly Tyr Thr Ile Ser Phe Ser Lys Ser Ala Pro Ile
 85 90 95
 Thr Ile Arg Asn Gly Lys Lys Gly Asp Thr Gly Pro Asp Gly Asp Ala
 100 105 110
 Gly Lys Asp Gly Ile Asp Gly Thr Asp Gly Lys Asp Gly Val Asp Gly
 115 120 125
 Thr Asp Gly Lys Asp Gly Val Asp Gly Thr Asp Gly Thr Asp Gly Lys
 130 135 140
 Asp Gly Glu Asn Gly Thr Asp Gly Lys Asp Gly Ala Asp Gly Thr Asn
 145 150 155 160
 Gly Thr Asp Gly Lys Asp Gly Val Asp Gly Thr Asp Gly Lys Asp Gly
 165 170 175
 Val Asp Gly Thr Asn Gly Asn Lys Gly Glu Gln Gly Asp Pro Gly Gln
 180 185 190
 Asn Pro Val Val Gly Ile Met Gln Asp Pro Ala Asp Ser Glu Tyr Tyr
 195 200 205
 Trp Thr Ile Lys Ile Gly Ser Gly Glu Pro Tyr Tyr Leu Ala Asp Asn
 210 215 220
 Asp Gly Asn Arg Ile Lys Ala Thr Ser Thr Val His Asp Gly Gln Thr
 225 230 235 240
 Pro Gln Leu Gly Val Lys Gln Trp Glu Thr Ser Ala Gly Gly Asp Asp
 245 250 255
 Asn Tyr Tyr Trp Thr Gln Lys Ile Gly Thr Gly Pro Glu Thr Trp Ile
 260 265 270
 Glu Ala Asp Gly Lys Lys Ile Val Ala Asn Ala Lys Asn Ala Val Ser
 275 280 285
 Val Phe Glu Lys Val Asp Leu Lys Glu Pro Asp Tyr Val Glu Phe Thr
 290 295 300
 Leu Ser Gly Gly Ala Thr Arg Phe Arg Leu Pro Ile Gly Arg Pro Val
 305 310 315 320
 Ile Glu Val Pro Glu Gly Arg Lys Leu Phe Phe Phe Asn Arg Gly Gly
 325 330 335
 Ser Gln Ala Ile Ala Phe Ser Cys Lys Gly Ile Ser Lys Glu Gln Leu
 340 345 350
 Ser Val Asp Val Pro Lys Gly Trp Arg Ala Thr Val Asp Ser Glu Ala
 355 360 365
 Val Ala Ser Leu His Arg Arg Gly Cys
 370 375

<210> 6183

<211> 378

<212> PRT

<213> B.fragilis

<400> 6183

Thr Lys Arg Ile Ile Asn Gln Lys Gln Asn Arg Met Lys Leu Lys Asn
 1 5 10 15
 Leu Ile Ala Cys Phe Phe Leu Gly Phe Ile Met Val Ser Cys Ile Gln

[illegible]

<400> 6184

Ile	Ser	Leu	Val	Leu	Ile	Glu	Glu	Leu	Lys	Met	Lys	Asn	Glu	Ile	
1				5				10					15		
Lys	Asp	Ile	Asn	Glu	Val	Ile	Ile	Arg	Phe	Leu	Asp	Gly	Thr	Ala	Thr
			20					25					30		
Gly	Glu	Glu	Lys	Val	Phe	Leu	Phe	Asn	Trp	Leu	Lys	Gln	Ser	Glu	Lys
			35				40					45			
Asn	Arg	Asn	Glu	Phe	Ser	Glu	Val	Arg	Asp	Leu	Trp	Leu	Leu	Gly	Asn

50	55	60
Thr Ile Ala Thr Asp Asp Leu Glu Thr Glu Ile Ala Leu Glu Arg Phe		
65	70	75
Lys Asn Arg Ile Gln Ser Thr Glu Ser Gly Leu Arg Lys Asn Arg Phe		80
	85	90
Val Phe Arg Lys His Phe Val Pro Phe Leu Arg Val Ala Ala Val Phe		95
	100	105
Leu Met Leu Phe Thr Val Trp Ser Val Phe Tyr Tyr Trp Gly Ser Ser		110
	115	120
Ser Val Pro Lys Gln Pro Asp Val Met Asn Arg Leu Leu Thr Ala Asn		125
	130	135
Gly Ser Lys Gly Arg Phe Val Leu Pro Asp Ser Thr Val Val Trp Leu		140
	145	150
Asn Ser Asn Ser Leu Leu Glu Tyr Pro Glu Thr Phe Ser Ser Ser Ala		155
	165	170
Arg Glu Val Ser Leu Ser Gly Glu Ala Tyr Phe Glu Val Arg Arg Asn		175
	180	185
Glu Lys Leu Pro Phe Arg Val Gln Ala Gly Glu Met Lys Val Glu Val		190
	195	200
Leu Gly Thr Arg Phe Ile Val Asp Asn Tyr Arg Arg Lys Ser Gly Val		205
	210	215
Glu Ala Val Leu Val Glu Gly Ser Val Lys Ile Ala Gly Cys Lys Met		220
	225	230
Asn His Ser Val Val Leu Thr Pro Gly Gln Leu Ile Asn Tyr Asp Lys		235
	245	250
Lys Ser Glu Arg Thr Lys Val Gln Met Val Asn Thr Asp Asp Tyr Ile		255
	260	265
Ser Trp Ile Gln Asn Glu Leu Thr Phe Asp Asn Asp Lys Leu Ala Asp		270
	275	280
Ile Ile Ile Asn Leu Asn Lys Trp Tyr Gly Val Asp Ile Glu Cys Pro		285
	290	295
Ser Glu Phe Ala Glu Lys Val Phe Met Ser Phe Ser Val Arg Asn Gly		300
	305	310
Glu Asn Leu Asp Glu Ile Leu Lys Ala Met Thr Leu Val Ala Pro Ile		315
	325	330
Arg Tyr Tyr Trp Glu Asn Gly Ile Leu His Ile Leu Pro Arg Lys Arg		335
	340	345
		350

<210> 6185

<211> 824

<212> PRT

<213> B.fragilis

<400> 6185

Tyr Asp Lys Leu Ile Asn Met Leu Lys Leu Phe Ile Ser Met Ala Ala		
1	5	10
Leu Phe Leu Gly Val Gly Ser Ser Val Phe Ala Gln Ile Glu Gly Lys		15
	20	25
Val Tyr Ile Asp Ala Asn Gly Asn Gly Ile Cys Asp Ala Gly Glu Arg		30
	35	40
Gly Leu Lys Gly Val Cys Val Gln Asp Gly Leu Asn Val Val Lys Thr		45
	50	55
Thr Asp Asp Gly His Phe Ile Leu Pro Gly His Lys Asp Thr Arg Phe		60
	65	70
Val Thr Leu Thr Val Pro Asp Gly Tyr Gln Ala Ser Thr Ser His Tyr		75
	85	90
Leu Ser Phe Asp Gly Thr Gly Lys Lys Tyr Glu Leu Gly Ile Cys Lys		95
	100	105
Thr Ser Val Asn Thr Gly Asn Gly Tyr Ser Phe Val Gln Ile Thr Asp		110

Thr	Glu	Thr	Ser	Leu	Tyr	Gly	Asp	Trp	Ile	Asp	Asn	Leu	Lys	Glu	Tyr
130						135					140				
Val	Lys	Thr	Asn	Pro	Thr	Ala	Phe	Ile	Ile	His	Thr	Gly	Asp	Ile	Cys
145					150					155					160
Tyr	Glu	Ala	His	Gln	Asp	Phe	His	Gly	His	Tyr	Leu	Arg	Ser	Val	Asp
				165					170						175
Leu	Gly	Ile	Pro	Thr	Tyr	Tyr	Cys	Val	Gly	Asn	His	Asp	Leu	Arg	Ala
			180					185						190	
Gly	Lys	Tyr	Gly	Glu	Glu	Leu	Trp	Gln	Ser	His	Phe	Gly	Pro	Ser	Trp
			195				200					205			
Tyr	Ser	Phe	Asp	Val	Gly	Asn	Val	His	Tyr	Val	Val	Thr	Pro	Met	Leu
			210			215						220			
Gly	Gly	Asp	His	Ala	Pro	Ser	Tyr	Arg	Arg	Ser	Asp	Ile	Ile	Arg	Trp
225				230						235					240
Leu	Lys	Asn	Asp	Leu	Ala	Gln	Thr	Asp	Lys	Gly	Lys	Arg	Ile	Val	Leu
				245					250						255
Phe	Asn	His	Asp	Leu	Trp	Phe	Trp	Gly	Asp	Asp	Leu	Leu	Phe	Lys	Asp
			260					265						270	
Lys	Asn	Gly	Glu	Gln	Ile	Asp	Phe	Ala	Asp	Tyr	Asn	Leu	Asp	Ala	Met
			275				280					285			
Ile	Tyr	Gly	His	Trp	His	Asn	His	Tyr	Tyr	Lys	Gln	Leu	Lys	Ser	Gly
			290			295					300				
Leu	His	Thr	Tyr	Cys	Ser	Ser	Thr	Pro	Asp	Lys	Gly	Gly	Ile	Asp	His
305				310						315					320
Gly	Thr	Ser	Cys	Phe	Arg	Ile	Tyr	Asn	Ala	Asp	Thr	Lys	Gly	Lys	Leu
				325					330						335
Ser	Ser	Ala	Thr	Arg	Tyr	Thr	Tyr	Ile	Asp	Gly	Ile	Leu	Thr	Ser	Ala
			340					345					350		
Tyr	Pro	Ala	Glu	Gly	Glu	Thr	Val	Ser	Val	Pro	Asp	Gly	Lys	Met	Thr
			355				360					365			
Val	Arg	Ile	Asn	Ala	Tyr	Arg	Thr	Ile	Ser	Asp	Ala	Lys	Lys	Val	Thr
			370			375					380				
Ala	Ser	Val	Glu	Arg	Asn	Gly	Arg	Leu	Val	Ser	Thr	Val	Thr	Leu	Met
385				390						395					400
Pro	Glu	Thr	Asp	Trp	Gly	Trp	Ser	Gly	Ala	Val	Arg	Val	Ser	Gly	Gly
				405					410						415
Lys	Gln	Arg	Leu	Val	Thr	Ala	Glu	Phe	Glu	Asp	Gly	Thr	Arg	Leu	
			420				425					430			
Thr	Lys	Arg	Val	Asp	Tyr	Thr	Val	Thr	Lys	Gln	Pro	Leu	Ser	Val	Ile
			435				440					445			
Ala	Thr	Ser	Asp	Val	Trp	Ala	Gly	Leu	Arg	Gly	Asn	Ala	Ala	His	Asn
			450			455					460				
Gln	Leu	Val	Asn	Asp	Ser	Val	Ser	Leu	Pro	Leu	Gln	Thr	Asn	Trp	Ile
465				470						475					480
Gln	Asn	Val	Gly	Ser	Asn	Ile	Tyr	Met	Cys	Ser	Pro	Ile	Val	Ala	Gln
				485					490						495
Asn	Lys	Val	Phe	Ile	Gly	Thr	Ile	Asp	Asp	Asp	Lys	Ala	Lys	Lys	Cys
			500					505					510		
Tyr	Val	Lys	Ala	Tyr	Asp	Ala	Thr	Thr	Gly	His	Leu	Cys	Trp	Thr	Phe
			515				520					525			
Val	Thr	Ser	Asn	Ser	Ile	Lys	Asn	Thr	Ile	Ala	Tyr	Glu	Asp	Gly	Arg
			530			535						540			
Ile	Phe	Ala	Ser	Asp	Ala	Ser	Gly	Met	Leu	Tyr	Ala	Ile	Asp	Ala	Glu
545				550					555						560
Lys	Gly	Thr	Ala	Cys	Trp	Gln	Thr	Gln	Leu	Pro	Val	Ser	Leu	Leu	Pro
				565				570							575
Leu	Leu	Asp	Glu	Gly	Leu	Ala	Val	Ala	Asp	Gly	Val	Val	Tyr	Ala	Gly
			580					585					590		

His Ala Lys Gly Thr Cys Ala Val Arg Ala Val Asp Gly Lys Ile Leu
 595 600 605
 Trp Gln Asn Lys Ala Trp Asp Gly Gly Glu Gly Thr Thr Ser Thr Phe
 610 615 620
 Thr Val Gly Ala Gly Val Leu Val Ala Ser Ala His Trp Asn Gly Leu
 625 630 635 640
 Phe Gly His Asp Ile Ser Asn Gly Ala Leu Leu Trp Lys Lys Arg Asp
 645 650 655
 Ser Lys Ile Arg Phe Arg Asp Gly Ser Ala Thr Phe Tyr Asp Gly Asn
 660 665 670
 Phe Tyr Leu Ala Ser Cys Glu Asn Leu Tyr Val Ile Asn Pro Arg Ser
 675 680 685
 Gly Asp Ile Leu Lys Met Ala Glu Thr Ser Tyr Glu Phe Asn Ser Ala
 690 695 700
 Cys Ala Pro Leu Val Thr Asp Lys Tyr Leu Ile Val Ser Thr Ser Asn
 705 710 715 720
 Lys Gly Val Val Ala Phe Asp Arg Leu Thr Phe Lys Glu Val Trp Asn
 725 730 735
 Tyr Arg Thr Gly Thr Ser Leu Phe Tyr Thr Val Pro Tyr Ser His Asn
 740 745 750
 Gln Glu Cys Thr Val Glu Val Ser Pro Val Leu Val Gly Ser Thr Val
 755 760 765
 Leu Phe Gly Ala Ser Asp Gly Tyr Leu His Ala Val Asp Leu Asn Thr
 770 775 780
 Gly Ala Tyr Arg Gly Lys Arg Ala Leu Gly Ala Pro Val Phe Ser Ser
 785 790 795 800
 Val Ala Val Ser Gly Asn Cys Leu Phe Val Ala Asp Phe Gly Gly Asn
 805 810 815
 Ile Tyr Asn Phe Lys Leu His Asn
 820

<210> 6186

<211> 297

<212> PRT

<213> B.fragilis

<400> 6186

Glu Asn Gly Phe Lys Glu Arg Lys Gln Met Lys Arg Ile Ile Ile Gly
 1 5 10 15
 Met Ile Ala Cys Ile Cys Ala Ile Thr Val Met Ala Gln Val Gln Thr
 20 25 30
 His Asp Ile Lys Gly Val Val Phe Asp Arg Arg Gln Gln Pro Ile Val
 35 40 45
 Gly Ala Leu Val Thr Ala Lys Gly Thr Asn Ile Ser Thr Ile Thr Asp
 50 55 60
 Val Asp Gly Lys Phe Leu Leu Gln Glu Val Pro Leu Ser Val Lys Lys
 65 70 75 80
 Val Val Val Thr Ser Ile Gly Met Glu Thr Arg Glu Val Asp Leu Asn
 85 90 95
 Val Pro Val Gln Leu Thr Gly Lys Arg Lys Lys Val Ser Phe Val Ala
 100 105 110
 His Ala Gly Leu Ser Met Ser Lys Tyr Thr Ile Tyr Gly Ser Asp Phe
 115 120 125
 Lys Val Gly Tyr Glu Phe Gly Leu Gly Ile Glu Val Arg Met Ser Lys
 130 135 140
 Arg Trp Ala Phe Gln Pro Thr Leu Gln Ile Cys Asn His Gly Ala Glu
 145 150 155 160
 Phe Asn Ala Glu Arg Tyr Gly Val Lys Tyr Gln Glu Thr Trp Asn Pro
 165 170 175

Val Ser Leu Asp Leu Pro Met Leu Phe Ile Leu Arg Cys Pro Ile Ala
 180 185 190
 Arg Lys Met Asn Leu Ala Phe Ser Met Gly Pro Val Phe Ser Tyr Gly
 195 200 205
 Phe Ala Gly Lys Val Lys Ala Ser Glu Thr Gly Lys Pro Asp Glu Glu
 210 215 220
 Tyr Asp Ile Tyr Ser Ser Glu Tyr Glu Tyr Asp Tyr Ser Gly Gly Lys
 225 230 235 240
 His Ser Leu Leu His Pro Phe Ser Phe Gly Val Ala Tyr Gly Ile Gly
 245 250 255
 Val Glu Tyr Lys Lys Trp Leu Ala Gly Ile Ser Gly Lys Ser Met Cys
 260 265 270
 Leu Gly Gln Asp Asp Glu Gly Phe Glu Ala Lys Glu His Asn Leu Val
 275 280 285
 Leu Thr Leu Gly Val Thr Asn Arg Asn
 290 295

<210> 6187

<211> 85

<212> PRT

<213> B.fragilis

<400> 6187

Thr Glu Lys Ser Phe Cys Arg Glu Leu Trp Val Cys Leu Met Asp Gly
 1 5 10 15
 Asp Ser Ala Arg Phe Leu Ile Glu Cys His Lys Ile Gly Ala Ile Ala
 20 25 30
 Ser Leu Lys Tyr Phe Leu Glu Gly Lys Leu Cys Leu Ser Val Val Pro
 35 40 45
 Leu Ser Ala Ser Asp Thr Ser Gln Pro Glu Arg Lys Thr Gln Glu Ser
 50 55 60
 Gly Glu Lys Asn Arg Thr Ile Asp Leu Met Asp Lys Asn Asn Arg Arg
 65 70 75 80
 Tyr Leu Lys Lys Lys
 85

<210> 6188

<211> 659

<212> PRT

<213> B.fragilis

<400> 6188

Asn Gly Thr Pro Tyr Pro Glu Gln Pro Glu Cys Leu Ala Ala Gly Tyr
 1 5 10 15
 His Gly Ala Tyr His His Pro Thr His Ile His His Ala Ile Gly Gln
 20 25 30
 Pro Gly His Ser Ala Gly Arg Arg Gly Asp Arg Ile His Arg His Pro
 35 40 45
 Gly Arg Val Val Gly Thr Val Gly Asn Val Ser Gly Asn Ile Leu Leu
 50 55 60
 Thr Ala Asn Arg Tyr Leu Thr Met Ala His Gly Asp His Leu Lys Tyr
 65 70 75 80
 Ser Gly Lys Pro Lys Ala Gly Lys Lys Thr Phe Leu Arg Leu Ile Ser
 85 90 95
 Tyr Val Ala Cys Asp Arg Arg Leu Leu Ile Val Ile Gly Val Leu Ile
 100 105 110
 Val Ile Ser Ile Ala Ala Asn Leu Thr Gly Ser Tyr Met Leu Arg Pro
 115 120 125
 Ile Ile Asn Asp Tyr Ile Leu Pro Gly Asp Phe Gln Gly Leu Val Arg

130	Ile	Leu	Leu	Phe	Leu	Ala	Ala	Ile	Tyr	Leu	Thr	Gly	Val	Ala	Ala	Thr
145	Tyr	Ile	Glu	Tyr	Ile	Leu	Leu	Asn	Lys	Ile	Gly	Gln	Arg	Thr	Val	Thr
	Arg	Met	Arg	Glu	Glu	Leu	Phe	Gly	Lys	Met	Glu	Arg	Leu	Pro	Val	Arg
	Tyr	Phe	Asp	Thr	His	Gln	His	Gly	Asp	Val	Met	Ser	Arg	Tyr	Thr	Asn
	Asp	Ile	Asp	Arg	Ile	Ser	Asp	Ala	Leu	Thr	Asp	Ser	Leu	Ser	Asp	Met
	Leu	Ser	Ser	Ala	Leu	Thr	Val	Ile	Gly	Ile	Phe	Cys	Leu	Met	Ile	Phe
	Ile	Ser	Pro	Thr	Leu	Thr	Ala	Val	Thr	Leu	Ile	Thr	Val	Pro	Leu	Met
	Phe	Leu	Ser	Ala	Lys	Gly	Ile	Val	Lys	Arg	Ser	Arg	Lys	Tyr	Phe	Lys
	Ala	Gln	Gln	Glu	Ala	Leu	Gly	Met	Met	Asn	Gly	Tyr	Ala	Glu	Glu	Met
	Ile	Ser	Gly	Gln	Lys	Val	Val	Lys	Val	Phe	Gly	His	Glu	Gln	Lys	Val
	Glu	Thr	Asp	Phe	Gly	Ile	Leu	Asn	Gln	Ser	Leu	Lys	Asp	Lys	Ser	Leu
	Lys	Ala	Gln	Phe	Tyr	Ser	Gly	Leu	Met	Met	Pro	Val	Met	Gln	Asn	Leu
	Asn	Thr	Leu	Asn	Tyr	Val	Ile	Ile	Thr	Ile	Val	Gly	Ala	Leu	Leu	Ala
	Ile	Phe	Arg	Gly	Phe	Asp	Val	Gly	Gly	Leu	Ala	Ala	Phe	Leu	Gln	Tyr
	Ser	Arg	Gln	Phe	Gly	Arg	Pro	Ile	Asn	Glu	Leu	Ala	Ser	Leu	Tyr	Asn
	Ser	Ile	Gln	Ala	Ala	Ile	Ala	Gly	Ala	Glu	Arg	Ile	Phe	Glu	Ile	Ile
	Asp	Glu	Ala	Pro	Glu	Lys	Ala	Asp	Val	Pro	Glu	Ala	Val	Thr	Leu	Lys
	Asn	Ile	Lys	Gly	Asp	Val	Ala	Leu	Lys	Asn	Val	Tyr	Phe	Gly	Tyr	Arg
	Pro	Glu	Lys	Thr	Ile	Leu	Lys	Gly	Val	Ser	Leu	His	Ala	Pro	Ala	Gly
	Lys	Lys	Ile	Ala	Leu	Val	Gly	Ala	Thr	Gly	Ala	Gly	Lys	Thr	Thr	Ile
	Leu	Asn	Leu	Leu	Pro	Arg	Phe	Phe	Asp	Ile	Gln	Ser	Gly	Glu	Ile	Thr
	Ile	Asp	Asn	His	Pro	Ile	Asp	Arg	Ile	Glu	Arg	Asn	Ser	Leu	Arg	Arg
	Ser	Met	Ala	Ile	Val	Leu	Gln	Asp	Thr	His	Leu	Phe	Thr	Gly	Thr	Val
	Arg	Glu	Asn	Ile	Arg	Phe	Gly	Arg	Leu	Ser	Ala	Thr	Asp	Asp	Glu	Val
	Val	Ala	Ala	Ala	Arg	Leu	Thr	Ala	Ala	His	Ser	Phe	Ile	Lys	Arg	Leu
	Pro	Gln	Gly	Tyr	Asp	Thr	Leu	Leu	Glu	Asn	Asp	Gly	Ala	Asn	Leu	Ser
	Gln	Gly	Gln	Arg	Gln	Leu	Leu	Asn	Ile	Ala	Arg	Ala	Ala	Val	Ala	Asp
	Pro	Ala	Ile	Leu	Leu	Leu	Asp	Glu	Ala	Thr	Ser	Asn	Ile	Asp	Thr	Arg
	Ser	Glu	Ile	Leu	Ile	Gln	Arg	Gly	Leu	Asp	Leu	Leu	Met	Gln	Gly	Arg

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 580
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Thr Ser Leu Ile Ile Ala His Arg Leu Ser Thr Ile Arg Asn Ala Asp
 610 615 620
 Thr Ile Leu Val Leu Glu His Gly Glu Ile Ile Glu Gln Gly Ser His
 625 630 635 640
 Gln Glu Leu Leu Ala Leu Lys Gly Lys Tyr Tyr Ser Leu Asn Glu Glu
 645 650 655
 Gln Phe Lys

<210> 6189
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 6189
 Arg Ile Ser Ala Ala Leu Ser Val Ala Ser Thr Ser Pro Val Ala Thr
 1 5 10 15
 Lys Gly Phe Arg Asp Gln Cys Asn His Arg Leu Asn Gly Arg Pro Met
 20 25 30
 Met Glu Gln Ile Val Lys Ile Ser Phe Gly Glu Ala Asn Arg Lys Lys
 35 40 45
 Thr Thr Ala Lys Arg Pro Ile His Asn Val Cys Cys Ser Ala Tyr Ser
 50 55 60

<210> 6190
 <211> 574
 <212> PRT
 <213> B.fragilis

<400> 6190
 Met Lys Lys Tyr Trp Gln Ile Leu Lys Lys Tyr Lys Ile Ser Leu Leu
 1 5 10 15
 Ala Cys Pro Leu Leu Val Leu Val Ser Val Met Cys Glu Thr Val Gln
 20 25 30
 Pro Met Tyr Met Ala Asp Ile Ile Asp Asn Gly Val Met Gln Arg Asp
 35 40 45
 Leu Ser Val Ile Thr Ala Val Gly Gly Lys Met Ile Leu Ile Ser Ile
 50 55 60
 Val Gly Leu Ile Phe Ser Ile Ala Asn Val Tyr Val Ser Ser His Ala
 65 70 75 80
 Ser Ile Gly Phe Gly Thr Asp Leu Arg Thr Gly Leu Phe Gly Lys Ile
 85 90 95
 Gln Gln Leu Ser Phe Phe Asp Ile Asp Arg Phe Ser Thr Ala Ser Leu
 100 105 110
 Ile Thr Arg Leu Thr Ser Asp Ile Ser Arg Ile Gln Gln Val Ile Met
 115 120 125
 Met Ser Met Arg Leu Met Leu Arg Ser Pro Leu Met Leu Val Met Ala
 130 135 140
 Val Phe Phe Val Val Arg Ile Asn Leu Glu Leu Ala Gly Val Leu Leu
 145 150 155 160
 Ala Ala Ile Pro Ile Leu Gly Phe Ser Val Phe Phe Ile Leu Arg Lys
 165 170 175
 Gly Phe Pro Phe Leu Lys Val Gln Lys Val Asp Gln Leu Asn
 180 185 190
 Glu Val Val Arg Glu Asn Leu Ile Asn Ile Arg Val Val Lys Ser Phe
 195 200 205
 Val Arg Glu Asp Phe Glu Ala His Lys Phe Lys Asp Lys Ser Glu Ser
 210 215 220
 Leu Arg Asp Thr Val Ile His Ala Ser Asn Ile Ile Val Ser Ile Phe

225 230 235 240
 Pro Val Met Gln Leu Val Met Asn Leu Ser Ile Ile Ala Ile Leu Trp
 245 250 255
 Met Gly Gly His Lys Val Met Thr Gly Glu Leu Lys Val Gly Glu Leu
 260 265 270
 Ile Ser Phe Val Asn Tyr Leu Gly Gln Val Leu Met Ser Leu Met Met
 275 280 285
 Leu Ser Met Ile Ile Met Ser Tyr Ala Arg Ala Ser Ala Ser Ser Lys
 290 295 300
 Arg Ile Leu Glu Val Leu Asp Thr Gln Pro Ser Leu Thr Asp Thr Pro
 305 310 315 320
 Glu Gly Met Gln Ser Thr Arg Glu Ile Glu Lys Gly Glu Ile Ala Phe
 325 330 335
 Glu Lys Val Ser Phe Arg Tyr Gly Gly Gly Glu Thr Asp Val Leu Arg
 340 345 350
 Asn Ile Ser Phe His Ile Arg Pro Gly Glu Thr Val Ala Ile Ala Gly
 355 360 365
 Ala Thr Gly Ser Ala Lys Ser Ser Leu Val Gln Leu Ile Pro Arg Leu
 370 375 380
 Tyr Asp Val Ser Ala Gly Glu Ile Arg Ile Asp Gly Ile Pro Val Gln
 385 390 395 400
 Asp Tyr Asn Leu Arg Glu Leu His Ala Arg Ile Gly Met Val Leu Gln
 405 410 415
 Lys Asn Glu Leu Phe Thr Gly Thr Ile Ala Glu Asn Leu Arg Trp Gly
 420 425 430
 Lys Pro Asp Ala Thr Gln Glu Glu Leu Glu Val Ala Ala Arg Ala Ala
 435 440 445
 Glu Ala His Glu Phe Ile Cys Ser Leu Pro Ala Gly Tyr Asp Thr Leu
 450 455 460
 Leu Gly Arg Gly Gly Ile Asn Leu Ser Gly Gly Gln Lys Gln Arg Ile
 465 470 475 480
 Cys Ile Ala Arg Ala Leu Leu Arg Lys Pro Lys Ile Leu Ile Leu Asp
 485 490 495
 Asp Ser Thr Ser Ala Val Asp Ser Glu Thr Glu Leu Arg Ile Arg Asn
 500 505 510
 Asn Leu Asn Ala Trp Leu Arg Asp Thr Thr Val Leu Ile Ile Thr Gln
 515 520 525
 Arg Ile Tyr Thr Met Gln Ser Ala Asn Arg Val Ile Leu Leu Asp Asp
 530 535 540
 Gly Glu Ile Glu Ser Ile Gly Thr Pro Glu Glu Leu Leu Glu Arg Ser
 545 550 555 560
 Glu Met Tyr Arg Glu Ile Tyr Tyr Ser Gln Gln Ile Val Ile
 565 570

<210> 6191

<211> 421

<212> PRT

<213> B.fragilis

<400> 6191

Ile Ile Ala Asn Phe Val Ser Asn Phe Asn Ser Met Ile Arg Ile Leu
 1 5 10 15
 His Thr Ala Asp Trp His Leu Gly Gln Thr Phe Phe Gly Tyr Asp Arg
 20 25 30
 Thr Gln Glu His Glu His Phe Leu Asp Trp Leu Ala Gly Val Leu Thr
 35 40 45
 Lys Asn Lys Ile Asp Val Leu Ile Val Ala Gly Asp Val Phe Asp Val
 50 55 60
 Ser Asn Pro Ser Ala Ala Ser Gln Arg Met Phe Tyr Arg Phe Ile His

65 70 75 80
 Arg Val Thr Thr Glu Asn Pro Arg Leu Gln Leu Val Val Val Ala Gly
 85 90 95
 Asn His Asp Ser Ala Ala Arg Leu Glu Ser Pro Leu Pro Leu Leu Gln
 100 105 110
 Glu Met Arg Thr Glu Ile Lys Gly Ile Val Arg Lys Gln Asn Gly Lys
 115 120 125
 Ile Asp Tyr Glu His Leu Leu Val Glu Leu Lys Asn Ala Ala Gly Glu
 130 135 140
 Val Glu Ala Leu Cys Leu Ala Val Pro Phe Leu Arg Gln Gly Asp Tyr
 145 150 155 160
 Pro Val Val Glu Thr Glu Gly Asn Pro Tyr Ala Glu Gly Val Lys Glu
 165 170 175
 Leu Tyr Ala Arg Leu Leu Lys Tyr Ala Leu Lys Lys Arg Thr Asp Gly
 180 185 190
 Gln Ala Leu Val Ala Val Gly His Leu Leu Ala Thr Gly Ser Glu Ile
 195 200 205
 Ala Glu Lys Asp His Ser Glu Arg Ile Ile Ile Gly Gly Leu Glu Ser
 210 215 220
 Val Ser Pro Glu Ser Phe Pro Glu Gln Ile Val Tyr Thr Ala Leu Gly
 225 230 235 240
 His Ile His Lys Ala Gln Arg Val Ser Gly Arg Glu Asn Ile Arg Tyr
 245 250 255
 Ala Gly Ser Pro Leu Pro Met Ser Phe Ala Glu Lys His Tyr His His
 260 265 270
 Gly Val Val Lys Val Thr Leu Asp Glu Gly Trp Ala Val Glu Ile Glu
 275 280 285
 Lys Leu Glu Tyr Thr Pro Leu Val Arg Leu Leu Ser Ile Pro Ala Thr
 290 295 300
 Glu Ala Ala Ala Pro Asp Glu Val Leu Asp Glu Leu Arg Gly Leu Glu
 305 310 315 320
 Leu Pro Glu Asp Glu Pro Met Pro Tyr Leu Glu Val Lys Val Lys Leu
 325 330 335
 Ser Glu Pro Glu Pro Met Leu Arg Gln Gln Val Glu Glu Ile Leu Glu
 340 345 350
 Gly Lys Pro Val Arg Leu Ala Arg Ile Val Ser Phe Tyr Arg Gln Ala
 355 360 365
 Ala Glu Gly Ser Val Glu Glu Thr Leu Thr Ala Gly Leu Gln Glu
 370 375 380
 Met Asn Pro Leu Gln Ile Val Lys Ala Thr Phe Glu Asn Ser Tyr Gln
 385 390 395 400
 Ala Glu Met Pro Glu Glu Leu Val Asn Leu Phe Gln Glu Ala Cys Arg
 405 410 415
 Thr Ile Asn Leu Glu
 420

<210> 6192
 <211> 380
 <212> PRT
 <213> B.fragilis

<400> 6192
 Thr Lys Met Asn Lys Arg Lys Leu Leu Gly Leu Leu Cys Leu Met Thr
 1 5 10 15
 Leu Leu Ala Thr Ser Cys Asp Asn Lys Gly Asp Tyr Trp Gly Ala Met
 20 25 30
 Glu Ser Ser Lys Ala Thr Leu Thr Leu Glu Arg Ile Cys Asp Met Ala
 35 40 45
 Thr Leu Ser Gln Asp Ser Val Glu Leu Leu Ser Asn Ile Leu Gly Met

50	55	60
Asn Thr Glu Glu Leu Tyr Arg Thr Asp Val Val Met Ile Gly Lys Val		
65	70	75
Thr Ser Glu Glu Thr Gly Phe Tyr Gln Tyr Pro Arg Phe Leu Ile Ala		80
	85	90
Lys Asp Arg Glu Met Lys Glu Val Leu Thr Glu Ala Tyr Val His Arg		95
	100	105
Asp Thr Glu Gly Thr Phe Tyr Ala Phe Leu Glu Ser Asn Met Leu Pro		110
	115	120
Val Gly Glu Thr Tyr Tyr Cys Ala Met Val Asp Tyr Asn Tyr Gly Tyr		125
	130	135
Asn Gly Arg Pro Gly Leu Leu Asp His Val Leu Gly Gly Asn Thr Arg		140
145	150	155
Gly Glu Arg Tyr Ser Glu Val Lys Pro Phe Arg Leu Ser Gly Leu Pro		160
	165	170
Arg Leu Val Val His Asp Ala His Phe Thr Gly Tyr Ser Phe Tyr Leu		175
	180	185
Ser Ala Glu Val Arg Phe Lys Ser Asn Gly Gly Ile Ile Glu Gln Gly		190
	195	200
Ala Cys Tyr Ser Ser Thr Lys Arg Ile Pro Thr Val Asp Asp Gln Lys		205
210	215	220
Thr Leu Ala Arg Glu Thr Arg Asn Tyr Asp Tyr Ser Phe Leu Glu Val		225
	230	235
Glu Val Thr Asp Leu Leu Pro Asn Thr His Tyr Tyr Ile Arg Pro Tyr		240
	245	250
Val Thr Thr Glu Glu Gly Thr Gly Tyr Gly Pro Val Val Glu Phe Thr		255
	260	265
Thr Glu Pro Gly Thr Glu Pro Ile Ile Asp Tyr Phe Thr Met Tyr Ile		270
	275	280
Asp Thr Asp Arg Ser Val Asn Leu Tyr Ala Thr Phe Tyr Ile Asp Asn		285
	290	295
Tyr Gln Ile Thr His Tyr Gly Tyr Ser Tyr Gly Ile Tyr Ser Pro Glu		300
305	310	315
Thr Gly Thr Val Thr Asp Glu Gln Lys Ile Glu Val Pro Leu Glu Asp		320
	325	330
Asn His Gly Gln Gln Leu Ser Lys Val Ile Thr Gly Leu Arg Pro Gly		335
	340	345
Ile Leu Tyr Ala Phe Arg Val Tyr Ala Glu Asn Gly Val Gly Val Thr		350
	355	360
Tyr Ser Gly Tyr Gln Thr Val Lys Ile Pro Val Glu		365
370	375	380

<210> 6193

<211> 996

<212> PRT

<213> B.fragilis

<400> 6193

Ser Val Val Lys Ala Asn Arg Ile Thr Met Lys Ile Leu Thr Ile Arg		
1	5	10
Leu Lys Asn Leu Ala Ser Ile Glu Gly Thr Phe Glu Ile Asp Phe Gln		15
	20	25
Ala Glu Pro Leu Arg Ser Ala Gly Ile Phe Ala Ile Ser Gly Pro Thr		30
	35	40
Gly Ala Gly Lys Ser Thr Ile Leu Asp Ala Leu Cys Leu Ala Leu Tyr		45
	50	55
Asp Lys Thr Pro Arg Phe Ser Ala Ser Val Glu Ser Leu Tyr Met Ser		60
65	70	75
Asp Ile Gly Glu Ser Arg Val Asn Gln Ala Asp Val Lys Asn Ile Leu		80

				85					90					95	
Arg	Arg	Gly	Thr	Gly	Glu	Gly	Phe	Ala	Glu	Val	Asp	Phe	Leu	Gly	Ala
			100					105					110		
Ser	Gly	His	Cys	Tyr	Arg	Ser	Arg	Trp	Ser	Val	Arg	Arg	Thr	Gly	Ser
		115					120					125			
Arg	Ala	Asn	Gly	Ala	Leu	Arg	Ser	Gln	Thr	Ile	Gln	Val	Thr	Asp	Leu
	130					135					140				
Thr	Ala	Asn	Gln	Glu	Leu	Gln	Gly	Thr	Arg	Lys	Glu	Leu	Leu	Ala	Gln
145				150						155					160
Leu	Val	Thr	Leu	Val	Gly	Leu	Thr	Tyr	Glu	Gln	Phe	Thr	Arg	Thr	Val
			165						170					175	
Leu	Leu	Ala	Gln	Asn	Asp	Phe	Ala	Thr	Phe	Leu	Lys	Ser	Arg	Glu	Ser
			180					185					190		
Ala	Lys	Ala	Glu	Leu	Leu	Glu	Lys	Leu	Thr	Gly	Thr	Glu	Ile	Tyr	Ser
		195					200					205			
Arg	Ile	Ser	Ser	Glu	Ile	Tyr	Leu	Arg	Ser	Lys	Thr	Ala	Asp	Ala	Glu
	210					215					220				
Leu	Asn	Gln	Leu	Lys	Ser	Asn	Ala	Thr	Leu	Ile	Glu	Leu	Leu	Ser	Glu
225				230						235					240
Glu	Glu	Ile	Thr	Leu	Leu	Arg	Thr	Glu	Lys	Glu	Ser	Leu	Thr	Asn	Leu
			245						250					255	
Arg	Glu	Gln	Gly	Ser	Lys	Ala	Leu	Ile	Asp	Leu	Asn	Ala	Gln	Leu	Ser
			260					265				270			
Val	Leu	His	Thr	Leu	Lys	Leu	Gln	Gln	Glu	Gln	Arg	Asp	Lys	Lys	Val
		275					280					285			
Gln	Asp	Met	Arg	Leu	Asp	Glu	Glu	Lys	Ser	Lys	Lys	Leu	Arg	Glu	Glu
	290					295					300				
Tyr	Thr	Arg	Gln	Ser	Asp	Ser	Leu	Ile	Arg	Phe	Arg	Gly	Gln	Cys	Glu
305				310						315					320
Ala	Val	Gln	Pro	Asp	Leu	Ser	Arg	Ala	Arg	Glu	Leu	Asp	Val	Gln	Ile
			325						330					335	
Gln	Ser	Leu	Val	Ser	Gln	Ser	Lys	Gln	Val	Glu	Glu	Ile	Leu	Gln	Gly
			340					345				350			
Ala	Glu	Lys	Ala	Ala	Asn	Ala	Gln	Ala	Asn	Lys	Leu	Gln	Ser	Val	Gln
		355					360					365			
Gly	Ala	Leu	His	Thr	Ser	Cys	His	Ser	Leu	Lys	Asn	Leu	Thr	Gly	Glu
	370					375					380				
Ile	Glu	Leu	Pro	Val	Thr	Glu	Glu	Thr	Gly	Leu	Phe	Leu	Glu	Ser	Val
385				390						395					400
Arg	Asn	Arg	Leu	Lys	Glu	Gln	Glu	Asp	Gln	Leu	Ala	Ile	Leu	Gln	Glu
			405						410					415	
Lys	Asn	Glu	Ala	Arg	Val	Asn	Arg	Leu	Asn	Ala	Phe	Gly	Ile	Glu	Ala
			420					425					430		
Val	Thr	Asp	Glu	Gln	Ala	Arg	Trp	Met	Gln	Glu	Gln	Thr	Arg	Leu	Gln
		43													

Ala	Ser	Ala	Glu	Tyr	Gln	Gln	Leu	Asn	Asn	Arg	Asn	Ile	Ala	Leu	Lys
				565					570					575	
Gln	Asp	Leu	Leu	His	Leu	Ser	Glu	Leu	Ser	Gly	Glu	Ile	Thr	Val	Gln
				580					585					590	
Leu	Gln	Ala	Phe	Leu	Gln	Glu	Ala	Glu	Gln	Lys	Arg	Pro	Ser	Ser	Glu
				595					600					605	
Glu	Glu	Gln	Asn	Pro	Asp	Tyr	Phe	Glu	Lys	Gln	Leu	His	Thr	Val	Gln
				610					615					620	
Gly	Lys	Leu	Asn	Leu	Leu	Ala	Glu	Lys	Met	His	Gln	Tyr	His	Gln	Leu
625					630					635					640
Tyr	Lys	Glu	Trp	Gln	Gln	His	Glu	Gly	Gln	Ile	Arg	Thr	Val	Arg	Ser
				645					650					655	
Ala	Cys	Glu	Ala	Leu	Arg	Glu	Gly	Val	Ala	Arg	Cys	His	Leu	Leu	Met
				660					665					670	
Gln	Gln	Val	Leu	Ala	Ala	Lys	Glu	Gln	Phe	Glu	Leu	Leu	Lys	Thr	Ala
				675					680					685	
Glu	Thr	Thr	Ala	Arg	Glu	Gln	Phe	Arg	Val	Val	Ser	Glu	Gln	Leu	Ile
				690					695					700	
Thr	Leu	Arg	Gln	Glu	Arg	Ala	Pro	Leu	Leu	Lys	Gly	Lys	Ser	Val	Glu
705					710					715					720
Asp	Ala	Glu	Ala	Ala	Ile	Arg	Lys	Lys	Glu	Lys	Gln	Leu	Asn	Asp	Ser
				725					730					735	
Val	Glu	Gln	Val	Arg	Lys	Glu	Gly	Glu	Glu	Val	Gln	Ser	Arg	Ile	Ser
				740					745					750	
Gly	Met	Gln	Gly	Glu	Ile	Arg	Gln	Leu	Asn	Ser	Ser	Ile	Asp	Glu	Leu
				755					760					765	
Met	Leu	Arg	Lys	Glu	Gln	Ile	Ala	Asp	Pro	Glu	His	Leu	Pro	Glu	Thr
				770					775					780	
Ile	Ala	Arg	Gln	Gln	Ala	Thr	Asn	Gln	Glu	Thr	Glu	Arg	Arg	Leu	Ser
				785					790					800	
Thr	Val	Glu	Ala	Arg	Leu	Leu	Gln	Gln	Glu	Gln	Asn	Arg	Lys	Lys	Leu
				805					810					815	
Lys	Gln	Leu	Glu	Gln	Glu	Leu	Thr	Glu	Lys	Gln	Glu	Thr	Ala	Asn	Arg
				820					825					830	
Trp	Gly	Lys	Leu	Asn	Lys	Leu	Ile	Gly	Ser	Ala	Asp	Gly	Thr	Lys	Phe
				835					840					845	
Lys	Val	Ile	Ala	Gln	Ser	Tyr	Thr	Leu	Asn	Leu	Leu	Met	His	Ala	
				850					855					860	
Asn	Lys	His	Leu	Ser	Tyr	Leu	Ser	Lys	Arg	Tyr	Arg	Leu	Gln	Gln	Val
				865					870					875	
Pro	Gly	Thr	Leu	Ala	Leu	Gln	Val	Ile	Asp	Cys	Asp	Met	Cys	Asp	Glu
				885					890					895	
Val	Arg	Thr	Val	Tyr	Ser	Leu	Ser	Gly	Gly	Glu	Ser	Phe	Leu	Ile	Ser
				900					905					910	
Leu	Ala	Leu	Ala	Leu	Gly	Leu	Ser	Ser	Leu	Ser	Ser	Asn	Asn	Leu	Lys
				915					920					925	
Val	Glu	Ser	Leu	Phe	Ile	Asp	Glu	Gly	Phe	Gly	Ser	Leu	Asp	Ala	Asp
				930					935					940	
Ser	Leu	Arg	Thr	Val	Met	Glu	Ala	Leu	Glu	Gln	Leu	Gln	Met	Gln	Gly
				945					950					955	
Arg	Lys	Ile	Gly	Val	Ile	Ser	His	Val	Gln	Glu	Met	Ser	Glu	Arg	Ile
				965					970					975	
Ala	Val	Gln	Val	Gln	Leu	His	Arg	Ala	Ala	Asn	Gly	Lys	Ser	Ala	Ile
				980					985					990	
Thr	Leu	Thr	Asn												
				995											

<210> 6194

<211> 98

<212> PRT
<213> B.fragilis

<400> 6194

Arg	Val	Asn	Asp	Phe	Asn	Ile	Gln	Gln	Asn	Met	Ile	Thr	Ser	Ala	Glu
1				5					10					15	
Glu	Ala	Leu	Asp	Leu	Ser	Ile	Leu	Ala	Tyr	Asn	Glu	Thr	Arg	Gln	Arg
			20					25					30		
Phe	Ile	Ile	Gly	Lys	Ala	Asp	Ile	Asn	Ser	Leu	Thr	Leu	Ser	Leu	Asn
		35					40					45			
Arg	Gln	Gln	Glu	Ala	Gln	Gln	Asn	Tyr	Ile	Ser	Ala	Leu	Gln	Asn	Tyr
	50					55					60				
Trp	Leu	Asn	Tyr	Tyr	Lys	Ile	Arg	Lys	Leu	Thr	Leu	His	Asp	Phe	Ala
65					70					75				80	
Thr	Gly	Ile	Ser	Leu	Thr	Asp	Lys	Phe	Asp	Tyr	Ala	Gly	Gly	Gln	Leu
				85					90					95	

Val Arg

<210> 6195
<211> 363
<212> PRT
<213> B.fragilis

<400> 6195

Arg	Lys	Ser	Leu	Ile	Thr	Ile	Met	Lys	Thr	Gln	Tyr	Pro	Ser	Tyr	Thr
1				5					10					15	
Leu	Cys	Leu	Ala	Leu	Thr	Met	Leu	Thr	Ala	Cys	Ser	Val	Arg	Lys	Lys
			20					25					30		
Glu	Ser	Ala	Ser	Glu	Lys	Gly	Val	Glu	Pro	Cys	Leu	Pro	Asp	Thr	Lys
		35				40						45			
Asn	Glu	Val	Ser	Val	Met	Thr	Leu	Lys	Lys	Gln	Ile	Phe	Asn	His	Glu
	50					55					60				
Leu	Val	Ser	Asn	Gly	Lys	Ile	Ser	Ala	Arg	Gly	Met	Ala	Asp	Leu	Arg
65				70					75					80	
Phe	Glu	Ser	Gly	Glu	Val	Ile	Ala	His	Ile	Trp	Val	Lys	Asn	Gly	Asp
			85					90					95		
Arg	Val	Arg	Lys	Gly	Gln	Lys	Leu	Ala	Glu	Leu	Asp	Lys	Phe	Lys	Leu
			100				105						110		
Asp	Asn	Gln	Leu	Ser	Gln	Ser	Glu	Asp	Ala	Leu	Lys	Lys	Ser	Glu	Leu
		115					120					125			
Glu	Leu	Arg	Asp	Val	Leu	Ile	Ser	Gln	Gly	Tyr	Pro	Ala	Asp	Asp	Ile
	130					135					140				
Ser	Gln	Val	Pro	Glu	Glu	Thr	Met	Lys	Leu	Ala	Lys	Val	Lys	Ser	Gly
145					150				155					160	
Tyr	Asp	Gln	Ser	Lys	Ser	Gln	Tyr	Glu	Met	Ser	Lys	Tyr	Asn	Ala	Glu
			165					170					175		
His	Ala	Thr	Leu	Thr	Ala	Pro	Phe	Asp	Gly	Val	Val	Ala	Asn	Leu	Phe
		180					185						190		
Ser	Asn	Pro	Tyr	Asn	Leu	Ala	Ser	Thr	Ser	Asp	Val	Phe	Cys	Thr	Val
		195				200						205			
Ile	Asp	Met	Gln	Gly	Met	Glu	Val	Asp	Phe	Thr	Val	Leu	Glu	Ser	Glu
	210				215						220				
Leu	Pro	Leu	Ile	Lys	Asn	Gly	Asp	Lys	Val	Val	Ile	Lys	Pro	Tyr	Ser
225				230					235					240	
Asp	Ala	Ala	Thr	Val	His	Glu	Gly	Ser	Ile	Ser	Glu	Ile	Asn	Pro	Leu
			245					250					255		
Val	Asp	Asp	Lys	Gly	Met	Val	Lys	Val	Lys	Ala	Arg	Val	Asn	Gly	Ala
			260					265					270		

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Gly Lys Leu Phe Ser Gly Met Asn Val Arg Val Ser Val His Arg Ser
 275 280 285
 Leu Gly Glu Gln Leu Val Ile Pro Lys Ser Ala Val Val Leu Arg Ser
 290 295 300
 Gly Lys Gln Val Val Phe Thr Leu Lys Asp Gly Lys Met Ala Gln Trp
 305 310 315
 Asn Tyr Ile His Thr Ala Leu Glu Asn Ala Asp Ser Tyr Ser Val Ala
 325 330 335
 Asp Gly Leu Thr Glu Gly Asp Thr Val Ile Val Ser Gly Asn Ile Asn
 340 345 350
 Leu Ala His Glu Ala Pro Val Thr Ile Ile Glu
 355 360

<210> 6196
 <211> 195
 <212> PRT
 <213> B.fragilis

<400> 6196
 Asp Met Glu Leu Asp Asp Leu Lys Lys Ser Trp Asn Ala Leu Asp Glu
 1 5 10 15
 His Leu Lys Asn Lys Glu Phe Ile Glu Lys Glu Ile Ala Gln Leu
 20 25 30
 Leu Gly Arg Ala Arg Asn Lys Met Asn Ser Ile Asp Arg Phe Asn Arg
 35 40 45
 Lys Leu Arg Phe Ala Ser Ile Gly Ile Leu Thr Leu Ala Val Leu Phe
 50 55 60
 Trp Ile Cys Ala Asp Thr Leu Thr Asp Leu Phe Tyr Trp Ile Ala Leu
 65 70 75 80
 Ser Leu Cys Ile Pro Ala Leu Cys Trp Asp Leu Tyr Ser Ala His Tyr
 85 90 95
 Leu Ser Arg Thr Arg Ile Asp Glu Met Pro Leu Val Thr Val Ile Ser
 100 105 110
 Arg Ile Asn Arg Tyr His Arg Trp Met Val Arg Glu Trp Ile Ile Gly
 115 120 125
 Ile Leu Tyr Leu Leu Ala Met Ala Thr Phe Phe Phe Phe His Arg Gln
 130 135 140
 Val Trp Gln Tyr Gly Ala Ala Gly Ile Ile Val Ser Leu Ile Val Trp
 145 150 155 160
 Ala Ile Gly Leu Gly Ile Cys Leu Trp Val Tyr Arg Arg Asn Ile Arg
 165 170 175
 His Ile Lys Glu Ile Lys Lys Asn Leu Asn Glu Leu Lys Glu Leu Asn
 180 185 190
 His Thr Ala
 195

<210> 6197
 <211> 345
 <212> PRT
 <213> B.fragilis

<400> 6197
 Asn Ile Arg Trp Glu Ala Ala Asp Gly Leu Glu Thr Ser Lys Thr Ser
 1 5 10 15
 Pro Ala Thr Ile Ser Thr Ser Ile Leu Phe Leu Val Arg Thr Pro Ala
 20 25 30
 Ser Gln Ser Arg Lys Cys Ser Cys Ser Cys Val Arg Ser Tyr Pro Lys
 35 40 45
 Lys Val Cys Pro Lys Cys Gln Ser Ala Val Cys Ser Ile Arg Ile Met

50		55		60											
Leu	Leu	Lys	Phe	Glu	Thr	Lys	Leu	Ala	Ile	Ile	Gln	Asp	Ser	Asn	Ile
65					70					75					80
Ile	Leu	Phe	Ile	Phe	Ala	Gln	Ala	Lys	Thr	Lys	Ile	Ile	Met	Lys	Ile
				85						90					95
Leu	Tyr	Tyr	Ile	Tyr	Gln	Ile	Cys	Ile	Ala	Leu	Pro	Ile	Leu	Leu	Val
			100						105					110	
Leu	Thr	Ile	Leu	Thr	Ala	Val	Val	Thr	Ile	Val	Gly	Ser	Leu	Leu	Gly
		115						120					125		
Gly	Ala	His	Ile	Trp	Gly	Tyr	Tyr	Pro	Gly	Lys	Ile	Trp	Ser	Gln	Leu
	130						135					140			
Ile	Cys	Leu	Phe	Leu	Leu	Ile	Pro	Val	Lys	Val	His	Gly	Arg	Glu	Lys
145					150					155					160
Leu	His	Glu	Arg	Thr	Ser	Tyr	Ile	Phe	Val	Pro	Asn	His	Gln	Gly	Ser
				165					170					175	
Phe	Asp	Ile	Phe	Leu	Ile	Tyr	Gly	Phe	Leu	Gly	Arg	Asn	Phe	Lys	Trp
			180					185					190		
Met	Met	Lys	Lys	Ser	Leu	Arg	Lys	Ile	Pro	Phe	Val	Gly	Lys	Ala	Cys
		195					200						205		
Glu	Ser	Ala	Gly	His	Ile	Phe	Val	Asp	Arg	Ser	Gly	Pro	Lys	Lys	Val
	210					215					220				
Leu	Glu	Thr	Ile	Arg	Gln	Ala	Lys	Asp	Ser	Leu	Lys	Asp	Gly	Val	Ser
225					230						235				240
Leu	Val	Val	Phe	Pro	Glu	Gly	Ala	Arg	Ser	Phe	Thr	Gly	His	Met	Gly
			245						250					255	
Tyr	Phe	Lys	Lys	Gly	Ala	Phe	Gln	Leu	Ala	Asp	Asp	Leu	Gln	Leu	Ala
			260					265					270		
Val	Val	Pro	Val	Thr	Ile	Asp	Gly	Ser	Phe	Glu	Ile	Leu	Pro	Arg	Thr
		275					280					285			
Gly	Lys	Trp	Ile	His	Arg	His	Arg	Met	Ile	Leu	Thr	Ile	His	Asp	Pro
	290					295					300				
Ile	Pro	Pro	Lys	Gly	Gln	Gly	Ala	Asp	Asn	Met	Lys	Ala	Thr	Met	Ala
305					310					315					320
Glu	Ala	Tyr	Thr	Ala	Val	Glu	Ser	Ala	Leu	Pro	Asp	Lys	Phe	Lys	Gly
			325						330					335	
Met	Val	Lys	Asn	Glu	Asp	Gln	Asp	Arg							
			340					345							

<210> 6198

<211> 390

<212> PRT

<213> B.fragilis

<400> 6198

Glu	Asn	Met	Leu	Gln	Arg	Val	Leu	Gly	Phe	Leu	Ile	Val	Ile	Leu	Val
1				5					10					15	
Leu	Pro	Asp	Ile	Tyr	Ile	Tyr	Arg	Thr	Phe	Ile	Lys	Gln	Leu	Thr	Leu
			20					25					30		
Ser	Leu	Phe	Trp	Arg	Ile	Leu	Tyr	Phe	Phe	Pro	Thr	Leu	Phe	Leu	Met
		35					40					45			
Ala	Gly	Val	Val	Ser	Leu	Ala	Phe	Phe	Ala	Asn	Tyr	Glu	Tyr	Ala	Glu
	50					55					60				
Gln	His	Thr	Leu	Trp	Ile	Gly	Arg	Phe	Ala	Val	Val	Phe	Phe	Leu	Phe
65					70					75					80
Ala	Ser	Pro	Lys	Leu	Ile	Phe	Thr	Ile	Cys	Ser	Ile	Ile	Gly	Arg	Pro
				85					90					95	
Phe	Asn	Arg	Trp	Leu	His	Trp	Ser	Arg	Lys	Pro	Phe	Val	Ala	Thr	Gly
			100					105					110		
Leu	Val	Leu	Ala	Thr	Leu	Asn	Ala	Ala	Leu	Ile	Leu	Tyr	Gly	Ser	Met

115	120	125
Val Gly Lys Asp Arg Phe	Glu Val Lys Glu Val Thr Phe Arg Ser Ser	
130	135	140
Arg Leu Pro Glu Ala Phe	Asn Gly Tyr Arg Ile Val Gln Leu Ser Asp	
145	150	155
Ile His Ile Gly Ser Trp	Gln Gly Asn Ala Lys Ser Leu Gln Arg Met	
165	170	175
Val Asp Leu Val Asn Ala Gln	Lys Pro Asp Leu Ile Val Phe Thr Gly	
180	185	190
Asp Leu Val Asn Asn Arg Ala	Ala Glu Leu Asp Gly Phe Glu Glu Ile	
195	200	205
Leu Ser Gln Leu His Ala Thr	Asp Gly Val Tyr Ser Ile Leu Gly Asn	
210	215	220
His Asp Tyr Gly Pro Tyr Tyr	Arg Trp Lys Ser Lys Arg Asp Gln Val	
225	230	235
Asn Asn Leu Asn Asp Leu Lys	Lys Arg Gln Ala Asp Met Gly Trp Ile	
245	250	255
Leu Leu Asn Asn Glu His Thr	Leu Leu His Arg Gly Asn Asp Ser Ile	
260	265	270
Ala Leu Ile Gly Val Glu Asn	Glu Gly Glu Pro Pro Phe Ser Gln His	
275	280	285
Gly Asp Leu Pro Lys Ala Gln	Ala Gly Thr Asn Gly Leu Phe Lys Leu	
290	295	300
Leu Leu Ser His Asn Pro Thr	His Trp Arg Arg Glu Val Leu Pro Gln	
305	310	315
Ser Asp Ile Asp Leu Met Leu	Ala Gly His Thr His Ala Met Gln Leu	
325	330	335
Ala Ile Gly His His Ser Pro	Ala Ser Trp Ile Tyr Pro Glu Trp Gly	
340	345	350
Gly Met Tyr Met Glu Asp Asn	Arg Gly Leu Tyr Val Asn Val Gly Met	
355	360	365
Gly Phe Val Gly Leu Pro Phe	Arg Phe Gly Ala Trp Pro Glu Ile Thr	
370	375	380
Val Ile Thr Leu Asp Lys		
385	390	

<210> 6199

<211> 180

<212> PRT

<213> B.fragilis

<400> 6199

Pro Asn Lys Ser Asn Pro Lys Arg Arg Ser Met Asn Leu Asn Pro Ala	
1 5 10 15	
His Ile Asn Glu Pro Val Gln Lys Glu Phe Leu Ser Val Ile Lys Glu	
20 25 30	
Tyr Glu Arg Val Ile Tyr Lys Val Cys Tyr Leu Tyr Thr Thr Arg Asn	
35 40 45	
Ala Thr Leu Gly Asp Leu Tyr Gln Glu Val Ile Leu Asn Leu Trp Lys	
50 55 60	
Ala Tyr Pro Lys Phe Arg Lys Glu Cys Lys Ile Ser Thr Trp Ile Tyr	
65 70 75 80	
Arg Ile Ala Leu Asn Thr Cys Ile Ser Phe Ile Arg Lys Glu Lys Asn	
85 90 95	
Val Pro Glu Ile Val Ala Leu Thr Arg Glu Ala Asp Trp Met Thr Glu	
100 105 110	
Glu Lys Asp Glu Leu Thr Glu Met Leu Arg Gln Leu Tyr Arg Met Ile	
115 120 125	
Asn Gln Leu Gly Gln Leu Asp Lys Ser Ile Val Leu Leu Tyr Leu Glu	

130		135		140
Glu Lys Ser Tyr Glu	Glu Ile Ala Glu Ile Thr Gly Leu Thr Val Thr			
145	150	155	160	
Asn Val Ala Thr Lys	Leu Ser Arg Ile Lys Asp Lys Leu Lys Lys Met			
	165	170	175	
Lys Lys Glu Glu				
	180			

<210> 6200
 <211> 1083
 <212> PRT
 <213> B.fragilis

<400> 6200

Leu Cys Gly Arg Thr Ile Gly Ala Ile Val Leu Thr Asn Ile Glu Thr				
1	5	10	15	
Met Asp Asn Pro Ser Lys Ile Lys Thr Gln Thr Lys Ala Ser Ser Phe				
	20	25	30	
Thr Leu Ile Val Ala Phe Ile Cys Val Ala Leu Ile Gly Leu Ala Leu				
	35	40	45	
Ile Pro Leu Leu Pro Val Lys Leu Asn Pro Ser Arg Thr Leu Pro Gly				
	50	55	60	
Phe Thr Val Gln Phe Ser Met Pro Gly Thr Ser Arg Val Val Glu				
65	70	75	80	
Ile Glu Ala Thr Ser Lys Leu Glu Ala Met Leu Ala Arg Ile Lys Gly				
	85	90	95	
Ile Lys Asn Ile Tyr Ser Thr Ser Asp Asn Gly Ser Gly Ser Ile Thr				
	100	105	110	
Ile Glu Leu Asp Lys Tyr Ala Asp Ile Asp Ala Val Arg Phe Glu Ala				
	115	120	125	
Ser Thr Ile Ile Arg Gln Thr Trp Pro Gln Leu Pro Asp Gly Val Ser				
	130	135	140	
Tyr Pro Tyr Ile Arg Met Lys Arg Pro Asp Glu Asn Ala Ser Arg Pro				
145	150	155	160	
Phe Met Ser Phe Thr Leu Asn Ala Pro Ser Thr Pro Ile Leu Ile Gln				
	165	170	175	
Gln Tyr Ala Asp Glu His Ile Lys Thr Arg Leu Ala Gln Ile Gln Gly				
	180	185	190	
Ile Tyr Lys Ile Asp Leu Ser Gly Ala Thr Pro Met Glu Trp Val Leu				
	195	200	205	
Glu Tyr Asp Ser Glu Gln Leu Arg Arg Leu Gly Ile Thr Leu Ser Asp				
	210	215	220	
Ile Gln Gln Ala Val Ser Arg Tyr Tyr Leu Lys Glu Phe Leu Gly Thr				
225	230	235	240	
Tyr Asn Val Glu Ser Ser Thr Gly Gly Lys Glu Trp Ile Arg Leu Ala				
	245	250	255	
Leu Met Pro Glu Thr Lys Asp Glu Gly Phe Asp Ala Ser Arg Ile Arg				
	260	265	270	
Val Lys Ser Ala Glu Gly Lys Leu Ile Ser Leu Asp Glu Leu Val Thr				
	275	280	285	
Val Ser His Met Glu Glu Ala Pro Gln Ser Tyr Tyr Arg Ile Asn Gly				
	290	295	300	
Leu Asn Ser Ile Tyr Leu Ser Ile Thr Ala Glu Thr Ala Asn Gln				
305	310	315	320	
Leu Gln Leu Ser Lys Gln Val Lys Glu Glu Met Glu Ala Ile Gln Lys				
	325	330	335	
Val Leu Pro Ala Gly Tyr Glu Ile His Thr Ser Tyr Asp Ala Thr Glu				
	340	345	350	
Phe Ile His Glu Glu Leu Asn Lys Ile Tyr Leu Arg Thr Gly Leu Thr				

355	360	365
Val Leu Ile Leu Leu Phe Phe	Val Leu Ile Ile Thr	Leu Asn Pro Arg
370	375	380
Tyr Leu Phe Leu Ile Val Val	Ser Leu Ser Ile Asn	Ile Ala Val Ala
385	390	395
Val Ile Phe Tyr Tyr	Leu Phe Gly Leu Glu Met	Gln Leu Tyr Ser Leu
405	410	415
Ala Gly Ile Thr Val Ser	Leu Asn Leu Val Ile Asp	Asn Thr Ile Val
420	425	430
Met Thr Asp His Ile Leu His	Arg Arg Asn Leu Lys	Ala Phe Met Ser
435	440	445
Ile Leu Ala Ala Thr Leu Thr	Thr Met Gly Ala Leu Val	Ile Ile Phe
450	455	460
Phe Leu Asp Glu Lys Ile Arg	Leu Asn Leu Gln Asp	Phe Ala Ala Val
465	470	475
Val Ile Ile Asn Leu Ala Val	Ser Leu Phe Val Ala	Leu Phe Phe Val
485	490	495
Pro Ala Leu Ile Glu Lys Ile	Gly Leu Lys Lys Arg	Lys Arg Arg Arg
500	505	510
Thr Gln Ser Arg Phe Phe Leu	Leu Arg Ala Ser Leu	Pro Arg Arg Ile
515	520	525
Thr Val Tyr Phe Thr Arg Phe	Tyr Gly Trp Met Ile	Arg Lys Leu Cys
530	535	540
Arg Trp Arg Val Ala Val Cys	Ile Leu Leu Ile Leu	Leu Phe Gly Leu
545	550	555
Pro Val Phe Met Leu Pro Asp	Lys Val Glu Gly Glu Gly	Arg Ala Thr
565	570	575
Glu Trp Tyr Asn Lys Thr Leu	Gly Ser Ser Thr Tyr Lys	Glu Lys Ile
580	585	590
Lys Pro Ile Val Asp Lys Ala	Leu Gly Gly Ser Leu Arg	Leu Phe Ile
595	600	605
Gln Lys Val Tyr Asn Gly Ser	Tyr Phe Thr Arg Asn	Glu Glu Val Val
610	615	620
Leu Tyr Val Tyr Ala Asn Leu	Pro Asn Gly Ser Thr	Leu Glu Gln Met
625	630	635
Asn Glu Leu Ile Lys Lys Met	Glu Ile Tyr Leu Ser	Gln Phe Lys Glu
645	650	655
Ile Lys Gln Phe Gln Thr Ser	Val Tyr Asn Ala Arg	Arg Gly Asn Ile
660	665	670
Asn Ile Tyr Phe Thr Lys Glu	His Gln Asn Ser Gly	Phe Pro Tyr Thr
675	680	685
Leu Lys Ala Asn Ile Ile Ser	Lys Ala Leu Gln Leu	Gly Gly Gly Ser
690	695	700
Trp Gly Val Tyr Gly Leu Gln	Asp Gln Gly Phe Ser	Asn Asp Val Arg
705	710	715
Glu Gly Ala Gly Ser Phe	Gln Val Lys Met Tyr	Gly Tyr Asn Tyr Asp
725	730	735
Glu Leu Tyr Glu Trp Ala Glu	Lys Leu Lys Ala Lys	Leu Leu Thr His
740	745	750
Arg Arg Ile Lys Glu Val Ile	Ile Asn Ser Tyr Phe	Ser Tyr Trp Lys
755	760	765
Asp Asp Tyr Gln Glu Phe Tyr	Phe Asn Leu Asn Arg	Glu Arg Met Ala
770	775	780
Gln Glu Asn Ile Asn Ala Asn	Ile Leu Phe Ser Thr	Ile Arg Pro Ile
785	790	795
Tyr Gly Lys Asn Met Glu Ile	Gly Ser Val Val Ala	Glu Asn Gly Ser
805	810	815
Glu Lys Ile Lys Leu Ser Ser	Lys Gln Ser Gln Glu	Tyr Asp Ile Trp
820	825	830

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Ala Met Gln Tyr Phe Pro Tyr Gly Thr Asp Asp Lys Gln Tyr Lys Leu
 835 840 845
 Ser Glu Leu Ala Thr Met Glu Lys Gly Gln Met Pro Gln Gln Val Ala
 850 855 860
 Lys Glu Asn Gln Gln Tyr Arg Leu Cys Leu Gln Tyr Glu Tyr Ile Gly
 865 870 875 880
 Ser Gly Glu Gln Gly Asn Lys Ile Leu Lys Arg Asp Leu Glu Glu Phe
 885 890 895
 Asn Lys Glu Leu Pro Met Gly Tyr Thr Ala Gln Ser Glu Arg Glu Ser
 900 905 910
 Trp Gly Trp Gly Lys Lys Asp Asn Lys Gln Tyr Leu Leu Leu Leu Val
 915 920 925
 Val Ile Ala Ile Ile Phe Phe Thr Thr Ser Ile Leu Phe Asn Ser Leu
 930 935 940
 Lys Gln Pro Leu Ala Ile Ile Phe Ile Ile Pro Val Ser Tyr Ile Gly
 945 950 955 960
 Val Phe Leu Thr Phe Tyr Trp Phe Lys Leu Asn Phe Asp Gln Gly Gly
 965 970 975
 Phe Ala Ser Phe Val Leu Leu Cys Gly Ile Thr Val Asn Ala Ser Ile
 980 985 990
 Tyr Ile Leu Asn Glu Tyr Asn Ala Ile Arg Arg Arg His Pro Arg Met
 995 1000 1005
 Ser Ala Leu Arg Ala Tyr Thr Lys Ala Trp Asn Ala Lys Ile Leu Pro
 1010 1015 1020
 Ile Phe Leu Thr Val Val Ser Thr Ile Leu Gly Phe Ile Pro Phe Met
 1025 1030 1035 1040
 Val Gly Thr Asp Lys Glu Ala Phe Trp Phe Pro Leu Ala Ala Gly Thr
 1045 1050 1055
 Ile Gly Gly Leu Val Met Ser Ile Ile Gly Ile Phe Phe Phe Leu Pro
 1060 1065 1070
 Val Phe Val Leu Lys Lys Arg Val Gly Lys Arg
 1075 1080

<210> 6201
 <211> 550
 <212> PRT
 <213> B.fragilis

<400> 6201
 Trp Ser Ile Ile Phe Thr Gly Asn Met Leu Val Thr Val Leu Tyr Met
 1 5 10 15
 Leu Val Tyr Arg Thr Gly Ile Lys Gly Gly Arg Lys Trp Leu Arg Leu
 20 25 30
 Lys Ile Asn Asn Pro Leu Lys Glu His Thr Leu Asp Arg Phe Tyr Asp
 35 40 45
 Lys Gly Ile Asp Trp Val Phe Ser His Lys Thr Leu Ser Val Leu Phe
 50 55 60
 Cys Ala Ile Ser Phe Pro Leu Cys Ile Phe Phe Phe Tyr Phe Ile Asp
 65 70 75 80
 Lys Glu Arg Met Pro Asp Ile Asp Glu Asn Glu Leu Ile Thr Arg Ile
 85 90 95
 Glu Trp Asn Glu Asn Ile His Val Asp Glu Asn Gln Arg Arg Val Asp
 100 105 110
 Glu Leu Phe Arg Glu Leu Gln Gly Ala Ser Val Glu Gln Thr Ala Ser
 115 120 125
 Ile Gly Leu Gln Asp Tyr Ile Leu Asn Arg Glu Gln Glu Leu Ser Ser
 130 135 140
 Ser Glu Ala Glu Leu Tyr Phe Lys Thr Glu Thr Ser Lys Glu Ile Ala
 145 150 155 160

Pro Leu Gln Glu Gln Ile Tyr Gln Lys Leu Lys Glu Arg Tyr Pro Leu
 165 170 175
 Ala Val Ile Ser Phe Ser Pro Pro Glu Thr Val Phe Glu Lys Leu Phe
 180 185 190
 Val Thr Gly Glu Ala Asp Ile Val Ala Glu Leu Tyr Ala Arg Asn Lys
 195 200 205
 Asp Arg Ala Pro Gly Pro Gly Thr Leu Arg Gly Leu Glu Gln Thr Phe
 210 215 220
 Gly Gln Lys Thr Gly Ile Pro Pro Thr Gly Ile Ala Phe Glu Asn Gln
 225 230 235 240
 Leu Asn Leu Ser Ile Asn Gln Glu Lys Leu Leu Leu Tyr Gln Ile Ser
 245 250 255
 Tyr Asn Glu Leu Tyr Arg Val Leu Arg Thr Ala Phe Lys Glu Asn Ser
 260 265 270
 Val Ala Met Leu His Ser Tyr Gln Gln Tyr Leu Pro Ile Ser Ile Ala
 275 280 285
 Gly Asp Glu Lys Thr Val Asn Gln Val Leu Gln Glu Thr Leu Ile Gln
 290 295 300
 Thr Gln Pro Asp Ser Lys Thr Gly Glu Val Asn Phe Ile Pro Leu Arg
 305 310 315 320
 Glu Leu Ile Lys Val Thr Pro Ala Glu Asp Leu Lys Ser Ile Thr Ala
 325 330 335
 Gly Arg Asn Gly Glu Tyr Ile Pro Tyr Lys Phe Tyr Gly Val Glu Asn
 340 345 350
 Ala Glu Lys Leu Met Thr Gln Val Lys Glu Thr Ser Ser Glu Thr Gly
 355 360 365
 Asp Trp Asp Ile Ala Phe Ser Gly Ser Phe Phe Ser Asn Gln Lys Met
 370 375 380
 Leu Asp Glu Leu Val Val Ile Leu Phe Ile Ser Leu Leu Leu Met Tyr
 385 390 395 400
 Phe Ile Leu Ala Ala Gln Phe Glu Ser Phe Met Gln Pro Leu Leu Val
 405 410 415
 Leu Met Glu Ile Pro Ile Asp Val Ala Phe Ala Leu Val Leu Leu Trp
 420 425 430
 Val Cys Gly His Thr Leu Asn Leu Met Ser Ala Ile Gly Leu Ile Val
 435 440 445
 Thr Cys Gly Ile Val Ile Asn Asp Ser Ile Leu Lys Leu Asp Ala Ile
 450 455 460
 Asn Glu Leu Arg Lys Glu Gly Val Pro Leu Leu Glu Ala Ile His Glu
 465 470 475 480
 Ala Gly Arg Arg Arg Leu Arg Pro Ile Ile Met Thr Ser Leu Thr Thr
 485 490 495
 Ile Phe Ala Met Val Pro Leu Leu Phe Ser Phe Asp Leu Gly Ser Glu
 500 505 510
 Leu Gln Lys Pro Leu Ser Ile Ala Met Ile Gly Thr Met Thr Ile Gly
 515 520 525
 Thr Leu Val Ser Leu Phe Ile Ile Pro Leu Leu Tyr Trp Phe Ile Tyr
 530 535 540
 Arg Asn Lys Glu Lys Arg
 545 550

<210> 6202

<211> 152

<212> PRT

<213> B.fragilis

<400> 6202

Ser Thr Pro Ile Ala Asn Thr His Asn Asp Met Met Gln Asn Pro Asp
 1 5 10 15

Tyr Phe Glu Arg Thr Arg Ser Arg Leu His Pro Lys Lys Tyr Arg Phe
 20 25 30
 Tyr Phe Phe Asp Tyr Leu Tyr Tyr Cys Gly Asp Arg Trp Ser Lys Arg
 35 40 45
 Asn Ser Arg Val Trp Gly Ser Gly Val Ile Phe Asn Tyr Trp Thr Phe
 50 55 60
 Cys Ile Trp Gly Pro Val Ala Phe Trp Thr Arg Leu Asn Gly Ile His
 65 70 75 80
 Leu Phe Ser Glu Ser Ile Asp Val Thr Ile Val Phe Ala Gly Met Leu
 85 90 95
 Leu Pro Phe Val Cys Thr Arg Leu Arg Tyr Arg Lys Asp Arg Val Ser
 100 105 110
 Ala Ile Arg His His Tyr Arg Arg Ser Ala Trp Arg Ser Ile Ile Pro
 115 120 125
 Pro Arg Leu Val Val Phe Gly Trp Phe Ile Ile Leu Leu Leu Glu Val
 130 135 140
 Ile Gly Ala Lys Leu Cys Glu Ala
 145 150

<210> 6203

<211> 486

<212> PRT

<213> B.fragilis

<400> 6203

His Arg Thr Ile Met Ile Lys Phe Leu Ile Gln Arg Pro Ile Ala Val
 1 5 10 15
 Leu Met Ala Phe Thr Ala Cys Phe Ile Val Gly Leu Val Thr Tyr Phe
 20 25 30
 Thr Leu Pro Val Ser Leu Leu Pro Asp Ile Ser Ile Pro Glu Ile Thr
 35 40 45
 Val Gln Val Ser Ala Lys Asn Thr Ser Ala Arg Glu Leu Glu Asn Thr
 50 55 60
 Val Val Lys Pro Val Arg Gln Gln Leu Ile Gln Val Ala Ala Leu Lys
 65 70 75 80
 Asp Met Thr Ser Glu Thr Arg Asp Gly Ala Gly Ile Ile Arg Leu Ser
 85 90 95
 Phe Asp Phe Gly Thr Asn Thr Asp Leu Ala Phe Ile Glu Val Asn Glu
 100 105 110
 Lys Ile Asp Ala Ala Met Asn Tyr Leu Pro Lys Asp Thr Asp Arg Pro
 115 120 125
 Lys Val Ile Lys Ala Ser Ala Thr Asp Ile Pro Val Phe Tyr Leu Asn
 130 135 140
 Leu Thr Leu Lys Thr Asp Ser Ala Tyr Glu Glu Thr Asp Gln Gln Ala
 145 150 155 160
 Phe Leu Asn Leu Cys Glu Phe Ser Glu Ser Val Ile Lys Arg Arg Ile
 165 170 175
 Glu Gln Leu Pro Glu Val Ala Met Val Asp Val Thr Gly Leu Leu Glu
 180 185 190
 Arg Gln Leu Gln Ile Val Pro Asp Met Asp Lys Leu Ala Met Leu Glu
 195 200 205
 Leu Ser Ile Glu Asp Ile Glu Thr Ala Leu Ala Gln Asn Asn Val Glu
 210 215 220
 Pro Gly Ser Met Thr Val Arg Asp Gly Tyr Tyr Glu Tyr Asn Ile Lys
 225 230 235 240
 Phe Ser Thr Leu Leu Arg Thr Ala Glu Asp Val Glu Asn Ile Tyr Ile
 245 250 255
 Arg Lys Gly Asp Arg Ile Ile Gln Leu Lys Glu Phe Cys Arg Ile Ala
 260 265 270

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Ile Val Pro Val Lys Glu Lys Gly Val Ser Val Ser Asn Gly Lys Arg
 275 280 285
 Ala Val Thr Leu Ala Ile Ile Lys Gln Ala Asp Glu Asn Met Asp Asn
 290 295 300
 Met Lys Asp Ala Leu Ser Glu Thr Met Asp Tyr Phe Lys Lys Ile Tyr
 305 310 315 320
 Pro Asp Ile Glu Phe Ser Val Ser Arg Asn Gln Thr Glu Leu Leu Asp
 325 330 335
 Tyr Thr Ile Ser Asn Leu Gln Gln Asn Leu Ser Leu Gly Phe Val Phe
 340 345 350
 Ile Cys Ile Val Ala Val Leu Phe Leu Gly Asp Val Lys Ser Pro Phe
 355 360 365
 Ile Ile Gly Leu Ser Met Val Glu Ser Ile Val Ile Ser Phe Leu Phe
 370 375 380
 Leu Tyr Leu Cys Lys Met Ser Leu Asn Ile Ile Tyr Leu Ser Gly Leu
 385 390 395 400
 Ile Leu Ala Leu Cys Met Met Ile Asp Ser Ser Ile Ile Val Thr Asp
 405 410 415
 Asn Ile Ser Gln Tyr Arg Glu Lys Gly Tyr Ser Leu Arg Arg Ala Cys
 420 425 430
 Val Ala Gly Thr Ser Glu Val Val Thr Pro Met Leu Ser Ser Ser Phe
 435 440 445
 Thr Thr Ile Asp Val Phe Val Pro Leu Val Phe Met Ser Gly Ile Ala
 450 455 460
 Gly Ala Ile Phe Tyr Asp Gln Ala Phe Ala Val Arg Val Gly Leu Met
 465 470 475 480
 Val Tyr Tyr Phe His Arg
 485

<210> 6204
 <211> 430
 <212> PRT
 <213> B.fragilis

<400> 6204
 Arg Lys Thr Ile Asp Met Lys Lys Arg Tyr Tyr Ile Val Ile Ala Ala
 1 5 10 15
 Leu Leu Phe Gly Ala Ser Val Ala Lys Ala Gln Asp His Ile Lys Leu
 20 25 30
 Asp Leu Gln Lys Thr Ile Gln Leu Ala Asn Asp Ser Ser Leu Glu Ala
 35 40 45
 Phe Arg Thr Gln Asn Met Tyr Leu Ser Gly Tyr Trp Glu Tyr Arg Thr
 50 55 60
 Tyr Lys Ala Asn Arg Leu Pro Ser Leu Thr Leu Asn Met Thr Pro Ala
 65 70 75 80
 Glu Tyr Asn Arg Asp Ile Thr Lys Arg Tyr Asp Ser Glu Lys Asp Leu
 85 90 95
 Asp Val Tyr Arg Ser Gln Gln Ser Phe Tyr Ala Ser Gly Asn Leu Ala
 100 105 110
 Ile Gln Gln Asn Phe Asp Leu Thr Gly Gly Thr Phe Tyr Leu Gln Ser
 115 120 125
 Gln Leu Gly Tyr Met Arg Ser Phe Gly Gly Asn Lys Thr Thr Gln Phe
 130 135 140
 Thr Ser Val Pro Ile Arg Leu Gly Tyr Ser Gln Ser Leu Val Gly Tyr
 145 150 155 160
 Asn Ser Phe Lys Trp Glu Arg Lys Ile Glu Pro Leu Lys Tyr Glu Lys
 165 170 175
 Val Lys Lys Glu Phe Val Tyr Asn Val Glu Ala Val Ser Val Gln Ala
 180 185 190

Thr Thr Tyr Phe Phe Asn Leu Ala Met Ala Gln Ala Glu Tyr Asn Leu
 195 200 205
 Ala Lys Glu Asn Met Val Ser Ser Asp Thr Leu Tyr Ser Ile Gly Val
 210 215 220
 Gln Arg Gln Lys Ile Ala Ala Ile Ser Lys Ala Asp Leu Leu Thr Leu
 225 230 235 240
 Lys Leu Asp Val Val Asn Ala Arg Asn Thr Leu Gln Asn Lys Ala Ser
 245 250 255
 Ala Leu Lys Arg Ala Met Phe Ser Leu Val Ser Phe Leu Asn Leu Asp
 260 265 270
 Lys Asn Thr Val Ile Asp Ile Asp Leu Pro Val Arg Pro Gln Glu Leu
 275 280 285
 Val Ile Pro Val Asp Lys Ala Leu Gln Met Ala His Glu Asn Asn Pro
 290 295 300
 Gln Leu Leu Gly Leu Lys Gln Asn Val Leu Glu Ala Glu Arg Asn Val
 305 310 315 320
 Asp Lys Thr Lys Lys Glu Ser Arg Phe Asn Ala Ser Val Asn Ala Ser
 325 330 335
 Ile Gly Phe Asn Gln Val Ala Asp Asn Phe Gly Asp Val Tyr His Lys
 340 345 350
 Pro Met Gln Gln Asp Leu Val Ser Val Ser Val Ser Ile Pro Leu Val
 355 360 365
 Asp Trp Gly Val Arg Lys Gly Lys Tyr Asn Met Ala Arg Asn Asn Leu
 370 375 380
 Asn Val Val Lys Thr Ser Ala Arg Gln Asp Glu Ile Ser Leu Asp Glu
 385 390 395 400
 Glu Val Ile Met Thr Cys Glu Arg Phe Gln Tyr Ser Thr Glu Tyr Asp
 405 410 415
 His Gln Cys Arg Arg Ser Thr Arg Pro Leu Tyr Pro Gly Leu
 420 425 430

<210> 6205

<211> 161

<212> PRT

<213> B.fragilis

<400> 6205

Gln Met Glu Val Pro Leu Val Asp Lys Asp Tyr Leu Leu Glu Arg Thr
 1 5 10 15
 Pro Gly Asn Gly Gly Trp Thr Tyr Ala Pro Ile Pro Glu Val Pro Gln
 20 25 30
 Asp Lys Lys Ala Pro Phe Gly Trp Val Lys Val Lys Gly Ser Ile Asp
 35 40 45
 Gly Val Glu Ile Lys Lys His His Leu Met Pro Met Gly Asn Gly Glu
 50 55 60
 Leu Gly Leu Ser Val Lys Ala Glu Ile Arg Lys Lys Ile Lys Lys Gln
 65 70 75 80
 Ala Gly Asp Tyr Val His Val Val Leu Tyr Leu Asp Glu Glu Pro Ser
 85 90 95
 Glu Ile Pro Glu Glu Leu Gln Leu Cys Leu Gln Asp Glu Pro Arg Ala
 100 105 110
 Leu Glu Phe Asn Ser Leu Ala Glu Asn Glu Arg His Asn Tyr Val
 115 120 125
 Lys Trp Ile Tyr Ser Ala Lys Thr Asp Arg Ala Lys Val Ala Arg Met
 130 135 140
 Ala Lys Ala Ile Asp Arg Leu Ala Ser Asn Leu Lys Tyr Tyr Asp Lys
 145 150 155 160
 Gly

<210> 6206
 <211> 389
 <212> PRT
 <213> B.fragilis

<400> 6206

Ile	Asn	Ser	Ser	Leu	Phe	Met	Lys	Val	Leu	Val	Thr	Gly	Ala	Lys	Gly
1				5					10					15	
Phe	Val	Gly	Arg	Asn	Leu	Val	Ser	Gln	Leu	Arg	Asn	Ile	Gln	Ser	Gly
			20					25					30		
Lys	Ala	Lys	Asn	Tyr	Ala	Leu	Ser	Gly	Asn	Glu	Leu	Ile	Ile	Phe	Glu
		35					40					45			
Tyr	Asp	Val	Asp	Ser	Asp	Pro	Ser	Glu	Leu	Asp	Asp	Tyr	Cys	Arg	Gln
	50					55					60				
Ala	Asp	Phe	Ile	Phe	Asn	Leu	Ala	Gly	Val	Asn	Arg	Pro	Leu	Asp	Gln
65					70					75					80
Ser	Glu	Phe	Met	Lys	Gly	Asn	Phe	Gly	Phe	Ala	Ser	Thr	Leu	Leu	Ala
				85					90					95	
Ser	Leu	Lys	Arg	His	Gly	Asn	Thr	Cys	Pro	Ile	Met	Ile	Ser	Ser	Ser
			100					105					110		
Thr	Gln	Ala	Ala	Leu	Asp	Asn	Pro	Tyr	Gly	Ala	Ser	Lys	Arg	Ala	Gly
		115						120					125		
Glu	Gln	Leu	Leu	Phe	Glu	Tyr	Ser	Arg	Glu	Thr	Gly	Ser	Lys	Val	Leu
	130					135					140				
Val	Tyr	Arg	Phe	Pro	Asn	Val	Phe	Gly	Lys	Trp	Cys	Arg	Pro	Asn	Tyr
145					150					155					160
Asn	Ser	Ala	Ile	Ala	Thr	Phe	Cys	Tyr	Asn	Ile	Ala	His	Asp	Leu	Leu
				165					170					175	
Ile	Gln	Val	Asn	Asp	Pro	Asn	Val	Glu	Met	Asn	Leu	Val	Tyr	Ile	Asp
			180					185					190		
Asp	Val	Val	Asp	Glu	Leu	Ile	Ser	Ala	Leu	Met	Gly	Asn	Glu	His	Arg
	195						200					205			
Glu	Gly	Ala	Tyr	Cys	Lys	Val	Ser	Ala	Val	Tyr	Thr	Val	Thr	Leu	Gly
	210					215					220				
Ala	Ile	Val	Glu	Leu	Leu	Tyr	Ser	Phe	Arg	Glu	Asn	Arg	Asn	Asn	Leu
225					230					235					240
Gly	Val	Pro	His	Val	Gly	Asp	Ala	Phe	Thr	Lys	Lys	Leu	Tyr	Ser	Thr
				245					250					255	
Tyr	Leu	Ser	Tyr	Leu	Pro	Lys	Asp	Gly	Phe	Gly	Tyr	Pro	Leu	Lys	Met
			260					265					270		
Asn	Val	Asp	Ala	Arg	Gly	Ser	Phe	Thr	Glu	Ile	Ile	Arg	Ser	Thr	Asp
		275					280					285			
Arg	Gly	Gln	Phe	Ser	Val	Asn	Ile	Ser	Lys	Pro	His	Ile	Thr	Lys	Gly
	290					295					300				
Asn	His	Trp	His	His	Thr	Lys	Asn	Glu	Lys	Phe	Val	Val	Val	Ser	Gly
305					310					315					320
Gln	Gly	Val	Ile	Arg	Phe	Arg	Asn	Met	Tyr	Asp	Ser	Ser	Ser	Glu	Ile
				325					330					335	
Leu	Glu	Tyr	Phe	Val	Ser	Gly	Asp	Lys	Leu	Glu	Ile	Ile	Asp	Ile	Pro
			340					345					350		
Thr	Gly	Tyr	Thr	His	Asn	Ile	Glu	Asn	Leu	Gly	Asp	Thr	Asp	Met	Val
		355					360					365			
Thr	Phe	Met	Trp	Cys	Asn	Glu	Cys	Phe	Asp	Pro	Gly	Arg	Pro	Asp	Thr
	370					375					380				
Tyr	Phe	Glu	Glu	Val											
385															

<210> 6207

<211> 66
 <212> PRT
 <213> B.fragilis

<400> 6207

Arg Gln Ile Ser Lys Ile Tyr Lys Gln Ser Gln Leu His Ser Tyr His
 1 5 10 15
 Leu Lys Lys Thr Ile Ser Pro Gly Ala Arg His Gln Ala His Thr Leu
 20 25 30
 Lys His Lys Ile Ile Arg Lys Ala Ser Ser Leu Lys Tyr His Leu Tyr
 35 40 45
 Leu Ser Asn Asn Asn Tyr Tyr Ile Ile Phe Leu Ile Gln Ser Ser Trp
 50 55 60
 Lys Asn
 65

<210> 6208
 <211> 632
 <212> PRT
 <213> B.fragilis

<400> 6208

Ser Asn Gly Phe Lys Asp Lys Ser Cys Phe Pro Lys Asn Glu Tyr Thr
 1 5 10 15
 Met Met Asp Ser His Asp Thr Asn Gln Pro Leu Lys Gln Gly Glu Leu
 20 25 30
 Glu Glu Glu Lys Lys Ala Val Glu Val Ser Glu Glu Ile Thr Glu Thr
 35 40 45
 Pro Ala Glu Glu Thr Ile Val Glu Lys Pro Thr Glu Asn Ala Ser Lys
 50 55 60
 Leu Ser Thr Lys Glu Glu Val Leu Leu Arg Leu Lys Glu Val Ala Gln
 65 70 75 80
 Asp Ala Glu Asn Ala Asn Lys Gln Glu Leu Asp Gly Leu Lys Gln Thr
 85 90 95
 Phe Tyr Lys Ile His Asn Ala Glu Ile Glu Ala Ala Lys Lys Thr Phe
 100 105 110
 Val Glu Asn Gly Gly Ala Glu Glu Phe Ile Ala Gln Pro Ser Gly
 115 120 125
 Val Glu Glu Glu Phe Lys Ser Leu Met Ala Ala Ile Lys Glu Lys Arg
 130 135 140
 Ser Ala Leu Ala Ala Glu Ile Glu Lys Gln Lys Glu Glu Asn Leu Gln
 145 150 155 160
 Val Lys Leu Ser Ile Ile Glu Glu Leu Lys Glu Leu Val Glu Ser Pro
 165 170 175
 Asp Asp Ala Asn Lys Ser Tyr Asn Glu Phe Lys Lys Leu Gln Gln Gln
 180 185 190
 Trp Asn Glu Val Lys Leu Val Pro Gln Ala Lys Val Asn Glu Leu Trp
 195 200 205
 Lys Asn Tyr Gln Leu His Val Glu Lys Phe Tyr Asp Ile Leu Lys Leu
 210 215 220
 Asn Asn Glu Phe Arg Glu Tyr Asp Phe Arg Lys Asn Leu Glu Ile Lys
 225 230 235 240
 Thr His Leu Cys Glu Ala Ala Glu Lys Leu Ala Asp Glu Gln Asp Val
 245 250 255
 Val Ser Ala Phe His Gln Leu Gln Lys Leu His Gln Glu Phe Arg Asp
 260 265 270
 Thr Gly Pro Val Ala Lys Glu Leu Arg Asp Glu Ile Trp Asn Arg Phe
 275 280 285
 Lys Ala Ala Ser Thr Ala Val Asn Arg Arg His Gln Gln His Phe Glu

290 295 300
 Ala Leu Lys Glu Thr Glu Gln His Asn Leu Asp Gln Lys Thr Val Ile
 305 310 315 320
 Cys Glu Ile Val Glu Ala Ile Glu Phe Asp Gln Leu Lys Thr Phe Ala
 325 330 335
 Ala Trp Glu Thr Lys Thr Gln Glu Val Ile Ala Leu Gln Asn Lys Trp
 340 345 350
 Lys Thr Ile Gly Phe Ala Pro Gln Lys Met Asn Val Lys Ile Phe Glu
 355 360 365
 Arg Phe Arg Lys Ala Cys Asp Glu Phe Phe Lys Lys Lys Gly Glu Phe
 370 375 380
 Phe Lys Leu Leu Lys Glu Gly Met Asn Ala Asn Leu Glu Lys Lys Lys
 385 390 395 400
 Ala Leu Cys Glu Lys Ala Glu Ser Leu Lys Asp Ser Thr Glu Trp Lys
 405 410 415
 Glu Thr Ala Glu Ile Leu Thr Lys Leu Gln Lys Glu Trp Lys Thr Ile
 420 425 430
 Gly Pro Val Ser Lys Lys Tyr Ser Asp Ala Val Trp Lys Arg Phe Ile
 435 440 445
 Thr Ala Cys Asp Tyr Phe Phe Glu Gln Lys Gly Lys Ala Thr Ser Ser
 450 455 460
 Gln Arg Ser Val Glu Gln Glu Asn Leu Glu Lys Lys Lys Ala Ile Ile
 465 470 475 480
 Ala Arg Leu Thr Ala Ile Asp Glu Thr Thr Asp Ala Asp Glu Ala Ser
 485 490 495
 Lys Glu Val Arg Glu Leu Met Lys Glu Trp Asn Gly Ile Gly His Val
 500 505 510
 Pro Phe Lys Glu Lys Asp Arg Leu Tyr Lys Gln Tyr His Gly Leu Ile
 515 520 525
 Asp Gln Leu Phe Asp Arg Phe Asn Ile Ser Ala Ser Asn Lys Lys Leu
 530 535 540
 Ser Asn Phe Lys Ser Ser Ile Gly Asn Ile Gln Ser Gly Gly Ser Gln
 545 550 555 560
 Ser Leu Tyr Arg Glu Arg Glu Lys Leu Val Arg Thr Tyr Glu Asn Met
 565 570 575
 Lys Asn Glu Leu Gln Thr Tyr Glu Asn Asn Leu Gly Phe Leu Thr Thr
 580 585 590
 Ser Ser Lys Lys Gly Asn Ser Leu Leu Thr Glu Ile Asn Arg Lys Val
 595 600 605
 Glu Lys Leu Lys Ser Asp Leu Glu Leu Val Leu Gln Lys Ile Lys Val
 610 615 620
 Ile Asp Glu Ser Ile Lys Glu Glu
 625 630

<210> 6209

<211> 113

<212> PRT

<213> B.fragilis

<400> 6209

Gly Gly Thr Ser Met Arg Gln Gly Val Val Tyr Leu Asn Lys Glu Arg
 1 5 10 15
 Val Gly Ile Ile Thr Glu Leu Ser Ser Asn Glu Tyr Lys Phe Arg Tyr
 20 25 30
 Asp Asp Glu Tyr Phe Asn Asp Pro Ser Lys Pro Ser Ile Ser Leu Thr
 35 40 45
 Leu Thr Lys Gln Gln Gln Glu Tyr Thr Ser His Tyr Leu Phe Pro Phe
 50 55 60
 Phe Ala Asn Met Leu Ser Glu Gly His Asn Arg Ile Val Gln Ala Arg

Asp

<400> 6210

[illegible]

<210> 6211
 <211> 414
 <212> PRT
 <213> B.fragilis

<400> 6211

Thr	Lys	Ser	Ser	Gly	Glu	Asn	Pro	Asp	Asn	Ile	Glu	Met	Asn	Ile	Leu	1	5	10	15
Phe	Leu	Thr	Leu	Asn	Arg	Val	Ser	Asp	Leu	Ser	Glu	Arg	Gly	Ile	Tyr	20	25	30	
Thr	Asp	Leu	Met	Arg	Glu	Phe	Ile	Cys	His	Gly	His	Arg	Val	Tyr	Met	35	40	45	
Val	Val	Pro	Ala	Glu	Arg	Arg	Phe	His	Glu	Ser	Thr	Ser	Ile	Lys	Glu	50	55	60	
Ser	Cys	Gly	Ala	Gln	Met	Leu	Arg	Val	Lys	Thr	Leu	Asn	Ile	Gln	Lys	65	70	75	80
Ser	Asn	Val	Val	Glu	Lys	Gly	Ile	Gly	Thr	Leu	Leu	Leu	Glu	Met	Gln	85	90	95	
Tyr	Gln	Cys	Ala	Ile	Lys	Arg	Tyr	Trp	Lys	Asp	Ile	Arg	Phe	Asp	Leu	100	105	110	
Ile	Leu	Tyr	Ser	Thr	Pro	Pro	Ile	Thr	Phe	Asn	Arg	Val	Ile	Ser	Ser	115	120	125	
Gln	Lys	Arg	Arg	Cys	Lys	Ala	Lys	Ser	Tyr	Leu	Leu	Lys	Asp	Ile		130	135	140	
Phe	Pro	Gln	Asn	Ala	Val	Asp	Leu	Gly	Met	Phe	Ser	Lys	Arg	Ser	Leu	145	150	155	160
Ile	Tyr	Arg	Leu	Phe	Arg	Lys	Lys	Glu	Lys	Asp	Leu	Tyr	Gln	Ile	Ser	165	170	175	
Asp	Phe	Ile	Gly	Cys	Met	Ser	Pro	Ala	Asn	Val	Asp	Tyr	Val	Leu	Thr	180	185	190	
His	Asn	Pro	Glu	Ile	Lys	Ala	Asp	Arg	Val	Glu	Ile	Cys	Pro	Asn	Ser	195	200	205	
Ile	Lys	Leu	Leu	Glu	Lys	Ser	Leu	Met	Ala	Ser	Thr	Val	Arg	Lys	Asn	210	215	220	
Ile	Leu	Gln	Lys	Leu	His	Ile	Pro	Ile	Asn	Lys	Thr	Leu	Phe	Ile	Tyr	225	230	235	240
Gly	Gly	Asn	Leu	Gly	Arg	Pro	Gln	Gly	Leu	Ile	Phe	Leu	Leu	Asp	Val	245	250	255	
Ile	Ala	Ala	Asn	Glu	Glu	Arg	Asn	Asp	Ser	Tyr	Phe	Ile	Ile	Val	Gly	260	265	270	
Ser	Gly	Thr	Glu	Tyr	Gly	Lys	Ile	Lys	Ser	Trp	Phe	Glu	Ala	Asn	His	275	280	285	
Pro	Asp	Asn	Ser	Met	Leu	Leu	Ser	Ser	Leu	Pro	Lys	Lys	Glu	Tyr	Asp	290	295	300	
Asp	Leu	Val	Lys	Ala	Cys	Asp	Val	Gly	Leu	Ile	Phe	Leu	Asp	Arg	Arg	305	310	315	320
Phe	Thr	Ile	Pro	Asn	Tyr	Pro	Ser	Arg	Leu	Leu	Ser	Tyr	Leu	Glu	Asn	325	330	335	
Arg	Met	Pro	Val	Leu	Leu	Ala	Thr	Asp	Leu	Asn	Thr	Asp	Ile	Gly	Arg	340	345	350	
Ile	Ala	Glu	Arg	Asn	Gly	Tyr	Gly	Phe	Trp	Thr	Glu	Asn	Gly	Asn	Leu	355	360	365	
Asp	Thr	Phe	Met	Glu	Met	Val	Asp	Ser	Leu	Ser	Ala	Asp	Arg	Glu	Lys	370	375	380	
Ile	Lys	Val	Met	Gly	Glu	Lys	Gly	Tyr	Glu	Tyr	Leu	Lys	Ser	Asn	Tyr	385	390	395	400
Thr	Val	Glu	Arg	Gly	Tyr	Arg	Met	Ile	Met	Lys	His	Phe	Glu			405	410		

2883 6211 414 PRT B.fragilis

<210> 6212
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 6212

Leu	His	Leu	Leu	Glu	Leu	Gln	Gln	Leu	Gln	Asn	Leu	Val	Trp	Lys	Pro
1				5					10					15	
Leu	Leu	Leu	Tyr	Leu	Asn	Asp	Leu	Asp	Glu	Ser	Tyr	Pro	His	Ser	Phe
			20					25					30		
Gln	His	Lys	Leu	Phe	Tyr	Ile	Phe	Pro	Ser	Tyr	Ile	Glu	Phe	Ile	Arg
		35					40					45			
Lys	Asn	Lys	Gln	Glu	Val	Leu	Val	Ile	Thr	Ile	Tyr				
	50					55					60				

<210> 6213
 <211> 162
 <212> PRT
 <213> B.fragilis

<400> 6213

Arg	Ile	Ser	Pro	Leu	Ser	Ser	Pro	Gln	Arg	Gly	Gly	Arg	Arg	Ala	Glu
1				5				10						15	
Gly	Gly	Phe	Cys	Leu	Ser	Pro	Asp	Thr	Gly	Ile	Arg	Leu	Gln	Tyr	Asn
			20					25					30		
Asp	Ala	Gln	Leu	Leu	Gly	Thr	Asp	Gly	His	Ala	Lys	Glu	Ile	Glu	His
		35					40					45			
Tyr	Arg	His	Arg	Gly	Ser	Lys	Leu	His	Thr	Gln	Ala	Val	Gly	Leu	Trp
	50					55					60				
Glu	Glu	Gly	Asn	Asp	Gly	Met	Glu	Thr	Asp	Cys	Gln	His	Leu	Leu	Glu
65					70				75					80	
Arg	His	Arg	Ser	Gln	Arg	Lys	Ile	Pro	Asp	Ser	Gly	Ala	Lys	Gln	Asp
			85					90					95		
Glu	Lys	Lys	Val	Ala	Glu	Ser	Val	Ser	Pro	Leu	Phe	Val	Val	Asp	Lys
			100					105					110		
Lys	Ala	Asn	Ile	Gln	Ala	Phe	Asp	Gln	Lys	Gly	Ile	Gln	Arg	Asn	Lys
		115					120					125			
Glu	Val	Lys	Ser	Val	Leu	Asn	Glu	Leu	Lys	His	Ser	Val	Phe	Lys	Ala
	130					135					140				
Gln	Asp	Phe	Ser	Arg	Pro	Lys	Leu	Cys	Phe	Asn	Ala	Thr	Leu	Lys	Leu
145					150					155					160
Val	Leu														

<210> 6214
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 6214

Glu	Cys	Leu	Pro	Lys	Asp	Arg	Asn	Leu	Phe	Ser	Phe	Gly	Asn	Gly	Val
1				5				10					15		
Asn	Ile	Val	Ser	Leu	Ile	Asp	Ser	Val	Lys	Met	Ile	Phe	Arg	Leu	Asn
			20					25					30		
Leu	Val	Leu	Val	Leu	Pro	Phe	Gly	Lys	Ser	Leu	Leu	Ala	Leu	Tyr	Glu
		35					40					45			
Leu	Phe	Trp	Gly	Glu	Cys	Arg	Cys	Gly	Tyr	Gln	Ile	Leu			
	50					55					60				

<210> 6215
 <211> 98
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (19)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 6215
 Lys Ala Ala Thr Ala Thr Ala Ser Leu Pro Leu Asn Gly Ile His Thr
 1 5 10 15
 Arg Ser Xaa Arg Ser Trp Tyr Thr Phe Ile Leu Lys Gly Ile Asp Asn
 20 25 30
 Val Gly Leu Leu Asn Glu Ile Thr Gln Val Ile Ser Arg Gln Leu Asn
 35 40 45
 Val Asn Ile Arg Lys Leu Asp Met Glu Thr Asp Asp Gly Ile Phe Glu
 50 55 60
 Gly Lys Val Gly Leu Tyr Val His Asp Val Glu Asp Val Lys Ala Ile
 65 70 75 80
 Cys Asn Asn Leu Arg Lys Ile Pro Asn Ile Lys Ser Val Thr Arg Val
 85 90 95
 Glu Asn

<210> 6216
 <211> 387
 <212> PRT
 <213> B.fragilis

<400> 6216
 Asn Ser Asn Thr Met Leu Lys Ser Lys Tyr Lys Ile Tyr Leu Leu Leu
 1 5 10 15
 Leu Cys Leu Thr Gly Cys Val Ser Glu Tyr Asn Ala Gln Leu Pro Ser
 20 25 30
 Ser Asp Glu Leu Leu Val Val Thr Gly Asp Ile Ile Ala Asn Thr
 35 40 45
 Glu Ala Ile Phe Ser Leu Ser Lys Ser Ile Pro Leu Ser Glu Asp Met
 50 55 60
 Pro Glu Asp Tyr Arg Asn Ile Tyr Ala Arg Ile Ala Val Val Gly Ser
 65 70 75 80
 Asp Gly Tyr Arg Ser Asp Phe Gly Thr Ala Leu Gly Asp Gly Lys Tyr
 85 90 95
 Gln Val Ser Ile Gly Glu Leu Gln Asp Asp Val Ser Tyr Gly Ile Glu
 100 105 110
 Ile Glu Tyr Asp Gly Glu Ile Tyr Thr Ser Ser Pro Ser Thr Pro Met
 115 120 125
 Val Ser Ser Glu Ile Asp Ser Val Ser Trp Ile Gln Pro Glu Pro Glu
 130 135 140
 Gln Ala Leu Ser Ile Arg Val Ser Thr His Gly Asp Pro Gly Lys Thr
 145 150 155 160
 Gln Tyr Tyr Met Trp Asn Tyr Arg Glu Asp Trp Glu Ile Arg Ala Ser
 165 170 175
 Tyr Ile Thr Thr Cys Tyr Phe Asp Pro Asp Met Asn Arg Ile Tyr Glu
 180 185 190
 Asp Ser Asn Tyr Pro Thr Phe Tyr Cys Trp Lys Lys Glu Ile Ser Arg
 195 200 205
 Asn Ile Leu Ile Gly Ser Thr Glu Lys Leu Lys Glu His Leu Ile Ile

210	215	220
Asn Asn Lys Leu Leu Asp Val Pro Val Asn Glu Asp Arg Phe Thr Val		
225	230	235
Leu Tyr Ser Ile Gln Val Gln Gln Arg Ala Leu Ser Lys Glu Gly Tyr		240
	245	250
Glu Tyr Tyr Leu Asn Val Gln Gln Gln Asn Glu Glu Met Gly Gly Ile		255
	260	265
Phe Thr Pro Gln Pro Ser Glu Ile Gln Gly Asn Ile Ser Cys Ile Ser		270
	275	280
Gln Pro Gly Arg Arg Thr Ile Gly Tyr Val Gly Val Tyr Lys Asn Ile		285
	290	295
Ser Glu Lys Arg Ile Tyr Ile His Pro Asn Glu Ile Lys Arg Pro Pro		300
305	310	315
Leu Tyr Ser Gly Cys Glu Glu Val Ser Asp Ser Glu Met Asp Glu Gln		320
	325	330
Gly Tyr Ser Thr Tyr Leu Ile Arg Tyr Leu Val Gly Tyr Arg Pro Val		335
	340	345
Gly Thr Gly Thr His Ile Asp His Trp Ala Leu Arg Arg Cys Thr Glu		350
	355	360
Cys Glu Ala Asn Gly Gly Ser Lys Asn Lys Pro Ser Phe Trp Pro Asn		365
	370	375
Asp His Gln		380
385		

<210> 6217
 <211> 121
 <212> PRT
 <213> B.fragilis

<400> 6217
Leu Arg Asn Thr Leu Gln Thr Lys Arg Asn Leu Cys His Ser Lys Ile
1 5 10 15
Lys Ser Thr Asn Ser Arg Asn Gln Ile His Asn Ile Leu Gly Ile Ser
20 25 30
Leu Leu Ile Lys Gln Ile Leu Ser Ile Phe Val Ser Asn Ser Gln Tyr
35 40 45
Ile Gly Asn Met Lys Gln Ile Gly Ile Gln Ile Arg Gln Arg Arg Lys
50 55 60
Met Leu Gly Ile Asn Gln Thr Leu Ala Asp Leu Ala Gln Ile Ser
65 70 75 80
Ile Asn Thr Ile Thr Lys Ile Glu Asn Gly Glu Ile Asn Ile Asn Phe
85 90 95
Gln Lys Leu Tyr Ala Ile Leu Glu Val Leu Gly Leu Glu Leu Ser Leu
100 105 110
Lys Ile Lys Asn Lys Glu Gly His Leu
115 120

<210> 6218
 <211> 681
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (363), (629)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 6218
 Ile Met Asp Thr Glu Asn Gln Lys Glu Ile Ala Glu Glu Gln Met Ile

1	5	10	15
Glu Gln Ala Phe	Gln Glu Leu Leu Asn Asp Tyr Leu Ala Thr Lys His		
	20	25	30
Arg Lys Arg Ile Glu Ile Ile Thr Lys Ala Phe Asn Phe Ala Asn Gln			
	35	40	45
Ala His Lys Gly Ile Lys Arg Arg Ser Gly Glu Pro Tyr Ile Met His			
	50	55	60
Pro Ile Ala Val Ala Lys Ile Val Cys Asn Glu Ile Gly Leu Gly Ser			
	65	70	75
Thr Ser Ile Cys Ala Leu Leu His Asp Val Val Glu Asp Thr Asp			
	85	90	95
Tyr Thr Val Glu Asp Ile Glu Asn Ile Phe Gly Ala Lys Ile Ala Gln			
	100	105	110
Ile Val Asp Gly Leu Thr Lys Ile Ser Gly Gly Ile Phe Gly Asp Arg			
	115	120	125
Ala Ser Ala Gln Ala Glu Asn Phe Lys Lys Leu Leu Leu Thr Met Ser			
	130	135	140
Asp Asp Ile Arg Val Ile Leu Ile Lys Ile Ala Asp Arg Leu His Asn			
	145	150	155
Met Arg Thr Leu Gly Ser Met Leu Pro Asn Lys Gln Tyr Lys Ile Ala			
	165	170	175
Gly Glu Thr Leu Tyr Ile Tyr Ala Pro Leu Ala Asn Arg Leu Gly Leu			
	180	185	190
Tyr Lys Ile Lys Thr Glu Leu Glu Asn Leu Ser Phe Lys Tyr Glu His			
	195	200	205
Pro Glu Glu Tyr Gln Glu Ile Glu Glu Lys Leu Asn Ala Thr Ala Ala			
	210	215	220
Glu Arg Asp Lys Val Phe Asn Glu Phe Thr Ala Pro Ile Arg Glu Gln			
	225	230	235
Leu Asp Lys Met Gly Leu Lys Tyr Arg Ile Leu Ala Arg Val Lys Ser			
	245	250	255
Ile Tyr Ser Ile Trp Asn Lys Met Gln Thr Lys His Val Pro Phe Glu			
	260	265	270
Glu Ile Tyr Asp Leu Leu Ala Val Arg Ile Ile Phe Glu Pro Arg Asn			
	275	280	285
Ile Asp Glu Glu Leu Asn Asp Cys Phe Asp Ile Tyr Val Ser Ile Ser			
	290	295	300
Lys Ile Tyr Lys Pro His Pro Asp Arg Leu Arg Asp Trp Val Ser His			
	305	310	315
Pro Lys Ala Asn Gly Tyr Gln Ala Leu His Val Thr Leu Met Gly Asn			
	325	330	335
Asn Gly Gln Trp Ile Glu Val Gln Ile Arg Ser Glu Arg Met Asn Asp			
	340	345	350
Val Ala Glu Gln Gly Phe Ala Ala His Trp Xaa Tyr Lys Glu Arg Gly			
	355	360	365
Gly Ser Glu Asp Glu Ser Glu Leu Glu Lys Trp Leu Arg Thr Ile Lys			
	370	375	380
Glu Ile Leu Asp Asp Pro Gln Pro Asp Ala Ile Asp Phe Leu Asp Thr			
	385	390	395
Ile Lys Leu Asn Leu Phe Ala Ser Glu Ile Phe Val Phe Thr Pro Lys			
	405	410	415
Gly Glu Leu Lys Thr Met Pro Gln Asn Ser Thr Ala Leu Asp Phe Ala			
	420	425	430
Phe Ser Leu His Thr Asp Ile Gly Ser His Cys Ile Gly Ala Lys Val			
	435	440	445
Asn His Lys Leu Val Pro Leu Ser His Lys Leu Gln Ser Gly Asp Gln			
	450	455	460
Val Glu Ile Leu Thr Ser Lys Ser Gln Arg Val Gln Pro Gln Trp Glu			
	465	470	475
			480

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Val Phe Ala Thr Thr Ala Arg Ala Arg Ala Lys Ile Ala Ala Ile Leu
 485 490 495
 Arg Lys Glu Arg Lys Thr Phe Gln Lys Glu Gly Glu Glu Leu Leu Asn
 500 505 510
 Glu Phe Phe Lys Lys Glu Glu Ile Arg Pro Glu Ala Ala Val Ile Glu
 515 520 525
 Lys Leu Cys Lys Leu His Asn Met Lys Asn Glu Glu Glu Phe Leu Val
 530 535 540
 Ala Ile Gly Asn Lys Thr Ile Val Leu Gly Asp Ala Asp Lys Asn Glu
 545 550 555 560
 Leu Lys Glu Lys Gln Ser Ser Asn Trp Met Lys Tyr Leu Thr Phe Ser
 565 570 575
 Phe Gly Asn Asn Lys Asp Lys Gln Gln Glu Glu Lys Glu Pro Gln Glu
 580 585 590
 Lys Glu Lys Ile Asn Thr Lys Gln Ile Leu Lys Leu Thr Glu Asp Ala
 595 600 605
 Leu Gln Lys Lys Tyr Ile Met Ala Glu Cys Cys His Pro Ile Pro Gly
 610 615 620
 Asp Asp Val Leu Xaa Tyr Met Asp Glu Asn Asp Arg Ile Ile Ile His
 625 630 635 640
 Lys Arg Gln Cys Pro Val Ala Ala Lys Leu Lys Ser Ser Tyr Gly Asn
 645 650 655
 Arg Ile Ile Ala Thr Glu Trp Asp Thr His Lys Lys Leu Ser Phe Leu
 660 665 670
 Val Tyr Ile Tyr Ile Lys Arg Asn Arg
 675 680

<210> 6219

<211> 295

<212> PRT

<213> B.fragilis

<400> 6219

Ser Lys Lys Thr Asn Met Ala Ile Ala Tyr Asp Gly Ile Asn Tyr Phe
 1 5 10 15
 Pro Val Gly Val Asn Phe Met Glu Glu Asn Ala Met Glu Val Ile Glu
 20 25 30
 Ala Lys Tyr Gly Ile Lys Gly Ser Ala Ile Val Leu Lys Leu Met Cys
 35 40 45
 Lys Ile Tyr Lys Glu Gly Tyr Tyr Ile Arg Trp Asp Glu Glu Gln Cys
 50 55 60
 Leu Ile Phe Ala Asn Lys Ala Gly Arg Glu Val Gln Ala Glu Glu Val
 65 70 75 80
 Gln Gly Ile Ile Glu Ile Leu Phe Thr Lys Gly Ile Leu Asp Arg Asn
 85 90 95
 Ser Tyr Gln Glu Asn Gly Ile Leu Thr Ser Glu Ser Ile Gln Lys Val
 100 105 110
 Trp Met Glu Ala Thr Lys Arg Arg Lys Arg Glu Leu Ser Glu Leu Pro
 115 120 125
 Tyr Leu Met Val Lys Pro Glu Lys Glu Asn Gly Lys Ala Asp Thr Pro
 130 135 140
 Pro Ala Leu Gln Glu Ile Gln Gln Pro Glu Leu Phe Lys Lys Glu Lys
 145 150 155 160
 Thr Pro Val Asn Pro Lys Asn Val Val His Val Ala Val Asp Ala
 165 170 175
 Lys Asn Ala Cys Asn Ser Gly Gln Ser Lys Val Lys Glu Lys Lys Ala
 180 185 190
 Glu Glu Asn Lys Glu Phe Pro Pro Ser Ala Pro Pro Lys Gly Glu Glu
 195 200 205

Glu Glu Arg Lys Gly Asp Ser Ala Tyr Leu Pro Ile Pro Gly Tyr Ala
 210 215 220
 Phe Asn Thr Met Thr His Asn Tyr Ser Gly Leu Met Asp Thr Leu Lys
 225 230 235 240
 Arg Leu Ser Ile Thr Asp Thr Gly Glu Val Asn Ser Ile Leu Arg Leu
 245 250 255
 Ser Asp Tyr Gly Arg Lys Gly Thr Thr Val Trp Lys Leu Ile Ala Asn
 260 265 270
 Thr Cys Trp Ser Asp Ile Gly Ala Lys Gly Arg Tyr Leu Ile Ala Ala
 275 280 285
 Leu Asn Lys Thr Lys Arg Arg
 290 295

<210> 6220
 <211> 121
 <212> PRT
 <213> B.fragilis

<400> 6220
 Thr Thr Lys Thr Asn Asn Lys Lys Lys Lys Glu Phe Lys Lys Asn
 1 5 10 15
 Lys Thr Gly Asn Lys Gln Ile Ser Asp Asn Arg Asp Leu Lys Ser Asn
 20 25 30
 Arg Gly Arg Lys Lys Glu Lys Pro Ile Gln Gly Ile Val Leu Lys His
 35 40 45
 Tyr Glu Cys Leu Lys Leu Leu Ile Thr Leu Tyr Gln Asp Gly Ala Met
 50 55 60
 Gly Ile Lys Lys Glu Thr Ser Gln Val Ala Leu Ala Arg Tyr Ile Asp
 65 70 75 80
 Asp Lys Lys Leu Leu Gly Asn Ile Arg Asn Gly Ile Phe Ile Pro Leu
 85 90 95
 Lys Phe Ser Thr Ile Leu Lys Glu Thr Asn Thr Ile Trp Asn Glu Met
 100 105 110
 Leu Arg Asp Lys Ser Ile Gly Ile Lys
 115 120

<210> 6221
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 6221
 Met Asn Glu Thr Lys Val Leu Ile Glu Lys Ile Thr Glu Gly Ile Gln
 1 5 10 15
 Glu Lys Lys Gly Lys Asn Ile Val Ile Ala Asp Leu Thr Asn Ile Asp
 20 25 30
 Asp Thr Ile Cys Lys Tyr Phe Val Ile Cys Gln Gly Asn Ser Pro Ser
 35 40 45
 Gln Val Ile Ala Ile Val Asp Ser Ile Lys Glu Phe Thr Arg Lys Gly
 50 55 60
 Ala Gly Thr Lys Pro Ser Ala Ile Asp Gly Gln Arg Asn Ala Glu Trp
 65 70 75 80
 Val Ala Met Asp Phe Ser Asp Val Leu Val His Val Phe Leu Pro Glu
 85 90 95
 Ala Arg Asn Phe Tyr Asn Leu Glu His Leu Trp Ala Asp Ala Lys Leu
 100 105 110
 Thr Thr Ile Pro Asp Ile Asp
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<210> 6222
<211> 74
<212> PRT
<213> B.fragilis
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<400> 6222

[illegible]

$\langle 210 \rangle$ 6223

<211> 367

<212> PRT

<213> B.fragilis

<400> 6223

Leu	Ile	Ser	Ala	Met	Glu	His	Pro	Glu	Asn	Asn	Glu	Ala	Tyr	Lys	Gly
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Leu	Val	Val	Asn	Ala	Gly	Ile	Glu	Gln	Pro	Ser	Ser	Val	Asn	Pro	Tyr
			20					25					30		
Leu	Lys	Arg	Lys	Val	Lys	Lys	Arg	Gln	Leu	Ser	Val	Ser	Glu	Phe	Val
		35					40					45			
Glu	Gly	Ile	Val	Lys	Gly	Asp	Val	Thr	Ile	Leu	Ser	Gln	Ala	Val	Thr
	50					55					60				
Leu	Val	Glu	Ser	Val	Arg	Pro	Glu	His	Gln	Ala	Thr	Ala	Gln	Glu	Val
65					70					75				80	
Ile	Glu	Lys	Cys	Leu	Pro	Tyr	Ser	Gly	Asn	Ser	Ile	Arg	Val	Gly	Ile
				85					90					95	
Ser	Gly	Val	Pro	Gly	Ala	Gly	Lys	Ser	Thr	Ser	Ile	Asp	Val	Phe	Gly
			100					105					110		
Leu	His	Val	Leu	Glu	Lys	Gly	Gly	Lys	Leu	Ala	Val	Leu	Ala	Ile	Asp
		115					120					125			
Pro	Ser	Ser	Glu	Arg	Ser	Lys	Gly	Ser	Ile	Leu	Gly	Asp	Lys	Thr	Arg
	130					135						140			
Met	Glu	Gln	Leu	Ser	Val	His	Pro	Lys	Ser	Phe	Ile	Arg	Pro	Ser	Pro
145					150					155				160	
Ser	Ala	Gly	Ser	Leu	Gly	Gly	Val	Ala	Arg	Lys	Thr	Arg	Glu	Thr	Ile
				165					170					175	
Ile	Leu	Cys	Glu	Ala	Ala	Gly	Phe	Asp	Lys	Ile	Phe	Val	Glu	Thr	Val
			180					185					190		
Gly	Val	Gly	Gln	Ser	Glu	Thr	Ala	Val	His	Ser	Met	Val	Asp	Phe	Phe
		195					200					205			
Leu	Leu	Ile	Gln	Leu	Ala	Gly	Thr	Gly	Asp	Glu	Leu	Gln	Gly	Ile	Lys
	210					215					220				
Arg	Gly	Ile	Met	Glu	Met	Ala	Asp	Gly	Ile	Val	Ile	Asn	Lys	Ala	Asp
225					230					235				240	
Gly	Ser	Asn	Ile	Asp	Lys	Ala	Lys	Leu	Ala	Ala	Ala	Gln	Phe	Arg	Asn
				245					250					255	
Ala	Leu	His	Leu	Phe	Pro	Ala	Pro	Asp	Ser	Gly	Trp	Thr	Pro	Arg	Val
			260					265					270		
Leu	Thr	Tyr	Ser	Gly	Phe	Tyr	Asn	Leu	Gly	Val	Lys	Glu	Ile	Trp	Asp
		275					280					285			

Met	Val	Tyr	Glu	Tyr	Ile	Asp	Phe	Val	Lys	Gly	Asn	Gly	Tyr	Phe	Glu
290						295					300				
Tyr	Arg	Arg	Asn	Glu	Gln	Ser	Lys	Tyr	Trp	Met	Tyr	Glu	Ser	Ile	Asn
305					310					315					320
Glu	Gln	Leu	Arg	Asp	Ser	Phe	Tyr	His	Asn	Ala	Lys	Ile	Glu	Ser	Met
				325					330					335	
Leu	Gln	Glu	Lys	Glu	Gln	Gln	Val	Leu	Arg	Gly	Asn	Leu	Thr	Ser	Phe
			340					345					350		
Val	Ala	Ala	Lys	Ser	Leu	Leu	Asp	Thr	Tyr	Phe	Glu	Asp	Leu	Lys	
	355						360					365			

<210> 6224
 <211> 401
 <212> PRT
 <213> B.fragilis

<400> 6224

Leu	Leu	Tyr	Ala	Asn	Gln	Arg	Asn	Phe	Arg	Ile	Asn	Thr	Trp	Tyr	Lys
1				5					10					15	
Ser	Ile	Lys	Lys	Met	Ile	Ser	Pro	Lys	Phe	Phe	Ile	Asp	Ser	Leu	Ser
		20						25					30		
Asp	Arg	Gln	Ile	Asp	Phe	Phe	Ser	Gly	Val	Pro	Asp	Ser	Leu	Leu	Lys
		35					40					45			
Asn	Ile	Cys	Ala	Tyr	Ile	Ala	Asp	Asn	Lys	Asp	Ala	Lys	His	Asn	Ile
	50					55					60				
Ile	Thr	Ala	Asn	Glu	Gly	Ala	Ala	Val	Gly	Leu	Ala	Val	Gly	His	Tyr
65					70					75					80
Leu	Ala	Thr	Arg	Glu	Ile	Pro	Val	Val	Tyr	Met	Gln	Asn	Ser	Gly	Glu
				85					90					95	
Gly	Asn	Ile	Ile	Asn	Pro	Leu	Ala	Ser	Leu	Thr	Asp	Lys	Glu	Val	Tyr
			100				105						110		
Asn	Ile	Pro	Ile	Leu	Leu	Leu	Ile	Gly	Trp	Arg	Gly	Glu	Pro	Gly	Val
		115					120					125			
His	Asp	Glu	Pro	Gln	His	Val	Lys	Gln	Gly	Lys	Val	Thr	Ile	Pro	Leu
	130					135					140				
Leu	Asp	Val	Met	Gly	Ile	Lys	Asn	Thr	Val	Met	Ser	Lys	Ser	Glu	Val
145					150					155					160
Asp	Phe	Thr	Lys	Gln	Leu	Asp	Asp	Ala	Leu	Val	Tyr	Met	Arg	Glu	Thr
			165						170					175	
Asn	Glu	Ala	Phe	Ala	Leu	Ile	Ile	Glu	Lys	Asp	Thr	Phe	Glu	Ser	Tyr
		180						185					190		
Ser	Leu	Lys	Leu	Lys	Glu	Asp	Ser	Val	Leu	Gln	Gln	Leu	Ser	Met	Ser
		195					200					205			
Arg	Glu	Asn	Ala	Ile	Gln	Met	Val	Val	Asp	Ser	Ile	Gly	Lys	Lys	Asp
	210					215						220			
Val	Ile	Val	Ser	Thr	Thr	Gly	Met	Ile	Ser	Arg	Glu	Leu	Phe	Glu	Tyr
225					230					235					240
Arg	Thr	Lys	Met	Asn	Glu	Ser	His	Gln	Ser	Asp	Phe	Leu	Thr	Val	Gly
			245						250					255	
Ser	Met	Gly	His	Ala	Ser	Gln	Ile	Ala	Leu	Gly	Ile	Ala	Leu	Glu	Ile
		260					265						270		
Pro	Asp	Arg	Lys	Ile	Tyr	Cys	Phe	Asp	Gly	Asp	Gly	Ala	Val	Ile	Met
	275						280					285			
His	Met	Gly	Ser	Met	Ala	Ile	Ile	Gly	Asp	Lys	Gly	Pro	Glu	Asn	Leu
	290					295					300				
Ile	His	Val	Val	Phe	Asn	Asn	Gly	Ser	His	Asp	Ser	Val	Gly	Gly	Gln
305					310					315					320
Pro	Thr	Val	Gly	Leu	Lys	Ile	Asn	Ile	Pro	Ala	Ile	Ala	Arg	Ala	Val
				325					330					335	

Gly	Tyr	Lys	Val	Val	Tyr	Ser	Val	Asp	Cys	Glu	Glu	Ala	Leu	Lys	Thr
			340					345					350		
Ala	Leu	Glu	Lys	Val	Ile	Lys	Glu	Ala	Gly	Pro	Ile	Leu	Leu	Glu	Val
			355					360					365		
Lys	Val	Lys	Lys	Gly	Asn	Arg	Lys	Asp	Leu	Gly	Arg	Pro	Ser	Ile	Thr
			370					375				380			
Pro	Ile	Gln	Asn	Lys	Leu	Ser	Phe	Met	Thr	Phe	Leu	Asn	Asn	Glu	Lys
											395				400
Lys															

<210> 6225

<211> 419

<212> PRT

<213> B.fragilis

<400> 6225

Lys	Ser	Phe	Tyr	Met	Glu	Gln	Ile	Thr	Glu	Lys	Ile	Asn	Asp	Leu	Phe
1				5					10					15	
Val	Ser	Trp	Gly	Phe	Asp	Ser	Ser	Glu	Val	Gly	Pro	Ile	Met	Thr	Leu
			20					25					30		
Val	Leu	Ile	Ile	Gly	Ile	Ala	Phe	Leu	Ala	Asp	Leu	Ile	Cys	Arg	Asn
			35					40					45		
Ile	Leu	Leu	Arg	Val	Val	Ala	Lys	Leu	Val	Lys	Lys	Thr	Lys	Ala	Thr
			50				55				60				
Trp	Asp	Asp	Ile	Val	Phe	Asp	Arg	Lys	Val	Leu	Ile	Tyr	Leu	Ser	His
65					70					75					80
Leu	Val	Pro	Pro	Ile	Ile	Ile	Tyr	Val	Leu	Ile	Pro	Leu	Ala	Ile	Pro
				85					90					95	
Asn	Val	Ser	Ala	Leu	Asp	Phe	Ile	Arg	Arg	Ile	Cys	Met	Ile	Tyr	Ile
			100					105					110		
Ile	Ala	Val	Phe	Leu	Arg	Phe	Ile	Ser	Ala	Phe	Leu	Ser	Ala	Val	Tyr
			115					120					125		
His	Val	Tyr	Ser	Glu	Arg	Glu	Gln	Phe	Arg	Asp	Arg	Pro	Leu	Lys	Gly
			130				135				140				
Leu	Leu	Gln	Thr	Ala	Gln	Val	Ile	Leu	Phe	Phe	Ile	Gly	Gly	Ile	Val
145					150					155					160
Val	Ile	Ser	Val	Leu	Ile	Asp	Lys	Ser	Pro	Met	Val	Leu	Leu	Thr	Gly
				165					170					175	
Leu	Gly	Ala	Ser	Ala	Ala	Ile	Leu	Met	Leu	Val	Phe	Lys	Asp	Ser	Ile
			180					185					190		
Met	Gly	Phe	Val	Ser	Gly	Ile	Gln	Leu	Ser	Ala	Asn	Asn	Met	Leu	Lys
			195				200					205			
Val	Gly	Asp	Trp	Ile	Ala	Met	Pro	Lys	Tyr	Gly	Ala	Asp	Gly	Thr	Val
			210				215					220			
Ile	Glu	Val	Thr	Leu	Asn	Thr	Val	Lys	Val	Arg	Asn	Trp	Asp	Asn	Thr
225					230					235					240
Ile	Thr	Thr	Ile	Pro	Pro	Tyr	Leu	Leu	Val	Ser	Asp	Ser	Phe	Gln	Asn
				245					250					255	
Trp	Arg	Gly	Met	Gln	Glu	Ser	Gly	Gly	Arg	Arg	Val	Lys	Arg	Ser	Ile
			260					265					270		
Asn	Ile	Asp	Met	Asn	Ser	Val	Arg	Phe	Cys	Thr	Pro	Glu	Met	Leu	Ala
			275				280						285		
Lys	Tyr	Lys	Lys	Ile	Gln	Leu	Leu	Thr	Asp	Tyr	Val	Glu	Gln	Thr	Glu
			290				295				300				
Gln	Val	Val	Lys	Glu	Tyr	Asn	Lys	Glu	His	His	Ile	Asp	Asn	Ser	Ile
305					310					315					320
Leu	Val	Asn	Gly	Arg	Arg	Gln	Thr	Asn	Leu	Gly	Val	Phe	Arg	Ala	Tyr
				325					330					335	

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Leu Thr Asn Tyr Leu Lys Ser Leu Pro Asp Val Asn Lys Asn Leu Thr
 340 345 350
 Cys Met Val Arg Tyr Leu Gln Pro Thr Glu Gln Gly Ile Pro Val Glu
 355 360 365
 Leu Tyr Phe Phe Ser Ala Val Lys Glu Trp Val Pro Tyr Glu Gly Ile
 370 375 380
 Gln Ala Asp Val Phe Asp His Leu Leu Ala Ile Val Pro Glu Phe Gly
 385 390 395 400
 Leu Arg Val Phe Gln Asn Pro Thr Gly Glu Asp Phe Arg Glu Trp Asn
 405 410 415
 Arg Arg Asn

<210> 6226
 <211> 279
 <212> PRT
 <213> B.fragilis

<400> 6226
 Ala Lys Phe Leu Phe Phe Ser Arg Arg Ser Glu Asp Leu Ser Leu Ile
 1 5 10 15
 Ser Leu Pro Ile Asn Leu Asp Asn Met Gly Lys Ile Ile Ala Leu Ala
 20 25 30
 Asn Gln Lys Gly Gly Val Gly Lys Thr Thr Thr Thr Ile Asn Leu Ala
 35 40 45
 Ala Ser Leu Ala Thr Leu Glu Lys Lys Val Leu Val Val Asp Ala Asp
 50 55 60
 Pro Gln Ala Asn Ala Ser Ser Gly Leu Gly Val Asp Ile Lys Gln Ser
 65 70 75 80
 Glu Cys Thr Ile Tyr Glu Cys Ile Ile Asp Arg Ala Asn Val Gln Asp
 85 90 95
 Ala Ile His Asp Thr Glu Ile Asp Ser Leu Lys Val Ile Ser Ser His
 100 105 110
 Ile Asn Leu Val Gly Ala Glu Ile Glu Met Leu Asn Leu Lys Asn Arg
 115 120 125
 Glu Lys Ile Leu Lys Glu Val Leu Thr Pro Leu Lys Glu Glu Tyr Asp
 130 135 140
 Tyr Ile Leu Ile Asp Cys Ser Pro Ser Leu Gly Leu Ile Thr Ile Asn
 145 150 155 160
 Ala Leu Thr Ala Ala Asp Ser Val Ile Ile Pro Val Gln Ala Glu Tyr
 165 170 175
 Phe Ala Leu Glu Gly Ile Ser Lys Leu Leu Asn Thr Ile Lys Ile Ile
 180 185 190
 Lys Ser Lys Leu Asn Pro Ala Leu Glu Ile Glu Gly Phe Leu Leu Thr
 195 200 205
 Met Tyr Asp Ser Arg Leu Arg Gln Ala Asn Gln Ile Tyr Asp Glu Val
 210 215 220
 Lys Arg His Phe Gln Glu Leu Val Phe Lys Thr Val Ile Gln Arg Asn
 225 230 235 240
 Val Lys Leu Ser Glu Ala Pro Ser Tyr Gly Leu Pro Thr Ile Leu Tyr
 245 250 255
 Asp Ala Glu Ser Thr Gly Ala Lys Asn His Leu Ala Leu Ala Lys Glu
 260 265 270
 Leu Ile Ser Ser Arg Asn Ser Lys
 275

<210> 6227
 <211> 204
 <212> PRT

<213> B.fragilis

<400> 6227

Val Gly Met Tyr Gln Tyr Val Ile Lys Arg Leu Ile Asp Phe Val Val
 1 5 10 15
 Val Phe Phe Val Leu Ile Ile Ile Trp Pro Val Leu Leu Leu Val Thr
 20 25 30
 Leu Trp Leu His Phe Ala Asn Lys Gly Ala Gly Thr Phe Phe Leu Gln
 35 40 45
 Glu Arg Pro Gly Arg His Gly Lys Ile Phe Lys Val Ile Lys Phe Lys
 50 55 60
 Thr Met Thr Asp Glu Arg Asp Ala Glu Gly Asn Leu Leu Pro Asp Asp
 65 70 75 80
 Lys Arg Leu Thr Lys Val Gly Lys Phe Val Arg Ser Thr Ser Ile Asp
 85 90 95
 Glu Leu Pro Gln Leu Ile Asn Ile Leu Lys Gly Asp Met Ser Phe Ile
 100 105 110
 Gly Pro Arg Pro Leu Leu Pro Gln Tyr Leu Pro Leu Tyr Asn Lys Glu
 115 120 125
 Gln Ala Arg Arg His Glu Val Arg Pro Gly Ile Thr Gly Trp Ala Gln
 130 135 140
 Val Asn Gly Arg Asn Ala Ile Ser Trp Val Arg Lys Phe Glu Leu Asp
 145 150 155 160
 Val Trp Tyr Val Asp His Cys Ser Phe Phe Leu Asp Leu Lys Ile Phe
 165 170 175
 Phe Leu Thr Ile Lys Lys Val Phe Val Arg Glu Gly Ile Ser Ser Asp
 180 185 190
 Thr Ser Val Thr Met Glu Pro Phe Thr Gly Asn Asn
 195 200

<210> 6228

<211> 355

<212> PRT

<213> B.fragilis

<400> 6228

Ser Ser Met Gln Ile Phe Cys Thr Leu Phe Asn Val Ala Tyr Leu Asp
 1 5 10 15
 Lys Ala Ile Thr Met Tyr Asn Ser Leu Glu Arg Val Ser Ser Glu Phe
 20 25 30
 Thr Leu Tyr Ala Leu Ala Met Asp Asp Arg Cys Tyr Glu Ile Leu Val
 35 40 45
 Asp Leu Asn Phe Arg Asn Leu Lys Pro Ile Lys Leu Ser Asp Phe Glu
 50 55 60
 Asp Asp Asp Leu Leu Lys Val Lys Ser Asp Arg Thr Phe Gly Glu Tyr
 65 70 75 80
 Cys Trp Thr Cys Ser Ser Ser Leu Ile Ser Tyr Val Leu His Glu Tyr
 85 90 95
 Cys Glu Pro His Cys Thr Tyr Ile Asp Ala Asp Ile Tyr Phe Phe Ser
 100 105 110
 Asp Pro Ile Val Leu Met Asn Glu Met Leu His Lys Asn Ala Ser Val
 115 120 125
 Leu Ile Val Gly His Arg Phe Asn Asp Tyr Asn Arg Asp Leu Met Cys
 130 135 140
 Arg Thr Val Gly Lys Tyr Cys Val Gln Tyr Asn Thr Phe Leu Asn Asp
 145 150 155 160
 Glu Asn Gly Asn Ile Leu Leu Glu Ile Trp Arg Arg Gln Cys Ile Thr
 165 170 175
 His Cys Ser Cys Asp Gly Asp Gly Val Tyr Trp Gly Asp Gln Lys Tyr

			180					185				190			
Met	Asp	Asn	Trp	Thr	Thr	Asp	Tyr	Asp	Phe	Val	His	Glu	Thr	Leu	Asn
		195					200					205			
Val	Gly	Ala	Gly	Ile	Ala	Pro	Trp	Asn	Ile	Ser	Gln	Tyr	Lys	Leu	Arg
	210					215					220				
Leu	Ile	Asn	Asp	Ser	Gly	Cys	Val	Ile	Val	Ser	Arg	Asn	Lys	Val	Asp
225					230					235					240
Cys	Ser	Thr	Val	Phe	Tyr	His	Phe	Glu	Asn	Ile	Asn	Tyr	Ile	Asn	Asp
			245					250						255	
Lys	Ile	Val	Lys	Ile	Asn	Val	Phe	Asn	Thr	Trp	His	Ile	Asp	Lys	Glu
		260						265					270		
Leu	Val	Lys	Ala	Phe	Tyr	Ile	Pro	Tyr	Leu	Thr	Glu	Val	Tyr	Asp	Ile
	275						280					285			
Lys	Leu	Met	Leu	Lys	Glu	Arg	Tyr	Ala	Val	Asn	Ile	Leu	Leu	Lys	Lys
	290					295					300				
His	Pro	Gly	Val	Lys	Cys	Asp	Lys	Arg	Thr	Phe	Val	Gln	Lys	Ile	Ile
305					310					315					320
Asp	Arg	Leu	Ser	Tyr	Leu	Ile	Asp	Lys	Glu	Lys	Gln	Lys	Leu	Tyr	Ile
			325					330						335	
Met	Ser	Val	Leu	Pro	Thr	Arg	Leu	Tyr	Lys	Lys	Asn	Asp	Val	Ile	Ile
		340					345					350			
Ile	Ile	Gly													
		355													

<210> 6229

<211> 508

<212> PRT

<213> B.fragilis

<400> 6229

Leu	Ile	Val	Asn	Glu	Met	Ser	Asp	Asn	Lys	Arg	Ile	Ala	Val	Asn	Thr
1			5					10					15		
Leu	Ile	Ile	Tyr	Ala	Arg	Met	Ala	Val	Thr	Thr	Ile	Ile	Ser	Leu	Ile
		20					25					30			
Ala	Thr	Arg	Tyr	Val	Leu	Leu	Glu	Leu	Gly	Gln	Ala	Asp	Tyr	Gly	Leu
	35					40					45				
Tyr	Asn	Val	Val	Gly	Gly	Ile	Val	Thr	Met	Leu	Asn	Val	Val	Ser	Ile
50					55					60					
Gly	Met	Tyr	Met	Thr	Thr	Gln	Arg	Phe	Ile	Asn	Val	Glu	Met	Gly	Lys
65				70					75					80	
Gly	Pro	Asn	Gly	Asn	Leu	Asn	Lys	Val	Phe	Asn	Val	Cys	Ile	Val	Leu
			85					90					95		
His	Ile	Gly	Phe	Ala	Leu	Ser	Ile	Phe	Ile	Ile	Gly	Leu	Thr	Val	Gly
	100							105				110			
Leu	Trp	Tyr	Ile	Tyr	Asn	Ile	Leu	Asn	Val	Leu	Pro	Glu	Lys	Leu	Ser
	115					120					125				
Asp	Ala	Val	Leu	Ile	Tyr	Phe	Ile	Ser	Thr	Thr	Val	Ser	Ala	Ile	Gly
	130					135					140				
Ile	Ile	Asn	Ile	Pro	Phe	Gln	Gly	Leu	Met	Leu	Ala	Phe	Glu	Lys	Phe
145				150					155					160	
Lys	Lys	Met	Ala	Ile	Ile	Asp	Leu	Leu	Ser	Asn	Phe	Met	Lys	Val	Pro
		165						170						175	
Leu	Val	Ile	Leu	Leu	Met	Cys	Trp	Ser	Gly	Asn	Lys	Leu	Leu	Phe	Tyr
	180						185					190			
Ala	Ile	Gly	Val	Cys	Phe	Ile	Ser	Leu	Phe	Ser	Phe	Leu	Phe	Tyr	Tyr
	195						200					205			
Ser	Tyr	Cys	Tyr	Arg	Lys	Phe	Gly	Asp	Ile	Val	Lys	Trp	His	Leu	Ser
	210					215					220				
Arg	Glu	Lys	Tyr	Ile	Tyr	Lys	Glu	Ile	Leu	Val	Phe	Asn	Asn	Tyr	Thr

225 230 235 240
 Ser Ile Gly Thr Ile Ala Tyr Leu Ser Arg Thr Gln Gly Ala Ser Val
 245 250 255
 Val Ile Asn Tyr Phe Phe Gly Ile Ile Val Asn Gly Ala Phe Ala Ile
 260 265 270
 Val Phe Gln Ile Glu Asn Phe Ile Met Met Phe Val Asn Asn Leu Gly
 275 280 285
 Thr Ala Ser Asp Pro Gln Ile Thr Gln Ser Tyr Ala Ser Gly Asn Tyr
 290 295 300
 Arg Asp Ala Phe Ser Leu Val Glu Lys Ile Ser Lys Tyr Ser Met Phe
 305 310 315 320
 Ile Met Leu Leu Val Thr Phe Ser Ile Gly Val Glu Leu Glu Phe Leu
 325 330 335
 Leu Arg Leu Trp Leu Gly Thr Leu Pro Glu Gly Ile Leu Val Leu Ser
 340 345 350
 Arg Trp Met Leu Val Ser Leu Leu Val Arg Ser Ile Asn Ser Ser Cys
 355 360 365
 Gly Ser Ile Ile Gln Ala Ser Gly His Val Lys Trp Phe Gln Ile Ile
 370 375 380
 Ser Ser Val Leu Leu Leu Leu Gly Leu Pro Ile Ser Trp Leu Leu Tyr
 385 390 395 400
 Lys Trp Gly Met Pro Val Thr Ile Ile Thr Phe Thr Val Thr
 405 410 415
 Asp Phe Ile Ser Arg Met Ile Tyr Leu Trp Leu Met His Arg Ile Ile
 420 425 430
 Lys Phe Asp Val Leu His Phe Ser Lys Lys Val Phe Leu Pro Val Ile
 435 440 445
 Lys Val Leu Cys Leu Ser Gly Leu Tyr Leu Tyr Leu Tyr Asn Ser Ile
 450 455 460
 Met Leu Gln Thr Asp Phe Met Arg Val Met Gly Ile Gly Val Ser Cys
 465 470 475 480
 Met Phe Tyr Val Cys Leu Cys Leu Phe Val Gly Met Asn Arg Leu Glu
 485 490 495
 Arg Asn Ser Ile Phe Phe Tyr Ile Lys Asn Lys Ile
 500 505

<210> 6230

<211> 345

<212> PRT

<213> B.fragilis

<400> 6230

His Leu Thr Lys Thr Arg Pro Met Ala Ile Ser Leu Lys Asp Asn Leu
 1 5 10 15
 Thr Ser Ser Tyr Phe Asn Ala Ala His Lys Leu Tyr Ser Lys Lys Ala
 20 25 30
 Arg Arg Arg Ile Val Ala Tyr Val Glu Ser Tyr Asp Asp Val Ala Phe
 35 40 45
 Trp Arg Thr Leu Leu Glu Glu Phe Glu Asp Glu Glu His Tyr Phe Gln
 50 55 60
 Val Met Leu Pro Ser Ala Thr Ser Leu Ala Lys Gly Lys Lys Met Val
 65 70 75 80
 Leu Met Asn Thr Leu Asn Thr Ala Glu Leu Gly Lys Ser Leu Ile Ala
 85 90 95
 Cys Val Asp Ser Asp Tyr Asp Phe Leu Leu Gln Gly Ala Thr Ala Thr
 100 105 110
 Ser Arg Lys Ile Asn Arg Asn Arg Tyr Ile Phe Gln Thr Tyr Ala Tyr
 115 120 125
 Ala Ile Glu Asn Tyr His Cys Tyr Ala Asp Ser Leu His Glu Val Cys

130	135	140
Val Gln Ala Thr Leu Asn Asp Arg His Leu Ile Asp Phe Asn Glu Phe		
145	150	155
Met Lys Arg Tyr Ser Gln Ile Ala Tyr Pro Leu Phe Leu Trp Ser Val		160
	165	170
Trp Phe Tyr Arg Arg His Asp Thr Tyr Thr Phe Thr Met Ser Glu Phe		175
	180	185
Asn Ala Cys Val Arg Leu His Asp Val Ser Leu Arg His Pro Glu Arg		190
	195	200
Ser Leu Glu Ala Val Arg Arg Ser Val Thr Ser Lys Leu Ser Glu Leu		205
	210	215
Ser Thr Arg Phe Pro Gln Gly Ile Glu Glu Val Asp Lys Leu Ser Val		220
225	230	235
Glu Leu Lys Gly Leu Gly Val Leu Pro Asp Thr Thr Tyr Leu Phe Ile		240
	245	250
Gln Gly His His Ile Met Asp Asn Val Val Met Lys Val Leu Thr Pro		255
	260	265
Val Cys Thr Ala Leu Arg Arg Glu Arg Glu Gln Glu Ile Lys Lys Leu		270
	275	280
Ala Glu His Asp Glu Gln Phe His Asn Glu Leu Thr Cys Tyr Gln Asn		285
290	295	300
Ser Gln Val Asn Val Glu Val Met Leu Arg Lys Asn Ser Ala Tyr Lys		305
	310	315
Asp Leu Tyr Leu Tyr Gln Trp Leu Lys Glu Asp Ile Lys Glu Phe Leu		320
	325	330
Tyr Gly Thr Asp Asn Arg Lys Asn Lys		335
	340	345

<210> 6231
 <211> 254
 <212> PRT
 <213> B.fragilis

<400> 6231
Ser Gln Thr Lys Ala Gln His Phe Met Lys Asn Arg His Tyr Leu Arg
1 5 10 15
His Ile Leu Ala Ile Thr Ala Leu Leu Phe Asn Gly Glu Ala Ile Tyr
20 25 30
Ser Gln Thr Tyr Pro Ile Glu Asn Tyr Leu Lys Ala Ala Gly Asp Tyr
35 40 45
Val Thr Ile Tyr Asn Gly Glu Ile Glu Leu Thr Tyr Ser Leu Ala Gln
50 55 60
Tyr Asp Asn Leu Pro Tyr Phe Gln Gly Asp Glu Phe Thr Thr Gly Glu
65 70 75 80
Ile Ile Phe Lys Gly Asn Arg Tyr Pro Gly Leu Asp Leu His Leu Asp
85 90 95
Leu His Lys Asp Gln Leu Cys Ala Leu Thr Pro Asp Ser His Tyr Ser
100 105 110
Met Ile Ile Asn Asn Glu Gly Ile Glu Gln Val Asn Leu His Asn Thr
115 120 125
Thr Phe Ile Tyr Phe Arg Pro Thr Lys Lys Thr Asp Leu Asn Lys Gly
130 135 140
Phe Tyr Glu Leu Leu Gln Asp Gly Lys Arg Leu Arg Leu Leu Ala Arg
145 150 155 160
Lys Thr Tyr Ser Val Ala Gln Ile Asn Val Glu Lys Ile Ala Lys Thr
165 170 175
Arg Lys His Gln Thr Glu Tyr Phe Ile Tyr Gly Val Lys Tyr Tyr Leu
180 185 190
Glu Tyr Asn Gly Ile Tyr Tyr Pro Val Ser Asn Asn Lys Ser Phe Ala

195	200	205
Lys Ile Phe Pro Glu Gln His	Lys Leu Ile Lys Arg Tyr Ala Arg Lys	
210	215	220
His Lys Leu Asn Phe Arg His	Asp Ala Asp Ala Ser Leu Ile Ala Leu	
225	230	235
Thr Asn Phe Cys Glu Glu Leu Ile	Asp Gln Lys Gln Thr Arg	
245	250	

<210> 6232
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 6232
Asn His Tyr Asn Met Lys Lys Leu Lys Ser Pro Ala Ser Gln Ser Glu
1 5 10 15
Ala Met Lys Leu Arg Trp Lys Lys Arg Ile Val Phe Glu Lys Gly Tyr
20 25 30
Thr Glu Ser Cys Ala Glu Trp Met Ala Glu Arg Leu Glu Ala Leu Leu
35 40 45
Asp His Met Gln Tyr Gly His Ala Thr Val Ala Tyr Arg Lys Gln Asn
50 55 60
Gly Ser Phe Gln Leu Val Lys Ala Thr Leu Ile Tyr Tyr Glu Ala Glu
65 70 75 80
Phe Arg Lys Lys Tyr Asp Pro Thr Lys Ile Glu Gly Ala Val Val Tyr
85 90 95
Trp Asn Val Asp Glu Gln Arg Trp Thr Thr Phe Gln Val Glu Asn Phe
100 105 110
Met Glu Trp Arg Pro Val Val
115

<210> 6233
 <211> 333
 <212> PRT
 <213> B.fragilis

<400> 6233
Met Lys Asn Lys Glu Leu Gly Met Lys Lys Leu Ile Lys Lys Ala Leu
1 5 10 15
Lys Leu Ile Leu Pro Leu Val Leu Gly Gly Phe Ile Leu Tyr Trp Val
20 25 30
Tyr Arg Asp Phe Asp Phe Val Lys Ala Met Glu Val Leu Gln His Gly
35 40 45
Thr Asn Trp Trp Trp Met Ala Phe Ser Leu Leu Phe Gly Ile Phe Ala
50 55 60
Gln Val Phe Arg Gly Trp Arg Trp Arg Gln Thr Leu Glu Pro Leu Gly
65 70 75 80
Ala Phe Pro Arg Arg Arg Asp Cys Val Asp Ala Ile Phe Ile Ser Tyr
85 90 95
Ala Ala Ser Leu Val Val Pro Arg Val Gly Glu Val Ser Arg Cys Gly
100 105 110
Val Leu Ala Lys Tyr Asp Asn Val Ser Phe Ala Lys Ser Leu Gly Thr
115 120 125
Val Val Thr Glu Arg Leu Val Asp Thr Val Thr Ile Leu Leu Ile Thr
130 135 140
Gly Val Thr Val Leu Leu Gln Met Pro Val Phe Val Thr Phe Leu Glu
145 150 155 160
Gln Thr Gly Thr Lys Ile Pro Ser Phe Met His Leu Leu Thr Ser Val
165 170 175

Trp Phe Tyr Ile Val Leu Phe Cys Thr Ile Gly Val Ile Val Leu Leu
 180 185 190
 Tyr Tyr Leu Ile Arg Thr Leu Ser Phe Phe Glu Lys Val Lys Gly Val
 195 200 205
 Val Leu Asn Val Cys Glu Gly Ile Met Ser Leu Arg Asn Val Lys Asn
 210 215 220
 Leu Pro Leu Phe Leu Leu Tyr Ser Phe Leu Ile Trp Leu Ser Tyr Phe
 225 230 235 240
 Leu His Phe Tyr Phe Thr Phe Tyr Cys Phe Ala Phe Thr Ala His Leu
 245 250 255
 Gly Leu Leu Ala Ala Leu Val Met Phe Val Gly Gly Thr Phe Ala Val
 260 265 270
 Ile Val Pro Thr Pro Asn Gly Ala Gly Pro Trp His Phe Ala Val Ile
 275 280 285
 Thr Met Met Met Leu Tyr Gly Val Asn Ala Thr Asp Ala Gly Ile Phe
 290 295 300
 Ala Leu Ile Val His Gly Ile Gln Thr Leu Leu Val Ile Leu Leu Gly
 305 310 315 320
 Val Tyr Gly Leu Val Thr Ile Ser Phe Leu His Arg Lys
 325 330

<210> 6234

<211> 444

<212> PRT

<213> B.fragilis

<400> 6234

Ile Leu Cys Lys Met Glu Lys Cys Lys Lys Val Tyr Val Gly Met Ser
 1 5 10 15
 Ala Asp Met Ile His Pro Gly His Leu Asn Ile Ile Arg Glu Ala Ser
 20 25 30
 Lys Leu Gly Ser Val Thr Val Gly Val Leu Thr Asp Ala Ala Ile Ala
 35 40 45
 Ser Tyr Lys Arg Leu Pro Tyr Leu Asp Tyr Glu Gln Arg Ala Glu Ile
 50 55 60
 Val Lys Ser Ile Lys Gly Val Asp Ser Val Ile Pro Gln Glu Thr Leu
 65 70 75 80
 Asp Tyr Val Pro Asn Leu Glu Lys Leu Arg Pro Asp Tyr Val Val His
 85 90 95
 Gly Asp Asp Trp Ile Asp Gly Val Gln Ser Asn Thr Arg Lys Arg Val
 100 105 110
 Ile Lys Cys Leu Leu Glu Trp Gly Gly Lys Val Val Asp Ile Ala Tyr
 115 120 125
 Thr Lys Gly Phe Ser Ser Thr Ala Met Asn Glu Arg Ile Lys Glu Ile
 130 135 140
 Gly Thr Thr Pro Glu Ile Arg Gln Lys Arg Leu Arg Arg Leu Ile Asn
 145 150 155 160
 Ala Lys Pro Ile Val Arg Ile Leu Glu Ser His Asn Gly Leu Thr Gly
 165 170 175
 Leu Ile Ala Glu Asn Ala Ser Val Ile Ile Asn Gly Val Lys His Glu
 180 185 190
 Phe Asp Gly Met Trp Ser Ser Ser Leu Thr Asp Ser Thr Ser Lys Gly
 195 200 205
 Lys Pro Asp Ile Glu Ala Val Asp Leu Thr Thr Arg Leu His Asp Leu
 210 215 220
 Asn Asp Thr Leu Glu Cys Thr Thr Lys Pro Val Ile Phe Asp Gly Asp
 225 230 235 240
 Thr Gly Gly Lys Val Glu His Phe Val Phe Thr Val Arg Thr Leu Glu
 245 250 255

Arg Leu Gly Ile Ser Ala Ile Ile Ile Glu Asp Lys Ile Gly Leu Lys
 260 265 270
 Gln Asn Ser Leu Phe Gly Thr Asp Ala Val Gln Thr Gln Asp Ser Ile
 275 280 285
 Glu Ser Phe Cys His Lys Ile Arg Ser Gly Lys Asn Ala Gln Val Thr
 290 295 300
 Asp Ser Phe Met Ile Ile Ala Arg Ile Glu Ser Leu Ile Ala Gly Lys
 305 310 315 320
 Ser Met Glu Asp Ala Leu Glu Arg Ala Ala Tyr Val Lys Ala Gly
 325 330 335
 Ala Asp Gly Val Met Ile His Ser Lys Asp Lys Ser Gly Met Asp Ile
 340 345 350
 Lys Asn Phe Cys Thr Cys Phe Arg Lys Ile Asp Ser Thr Thr Pro Ile
 355 360 365
 Val Ala Val Pro Thr Thr Tyr Asn Gln Phe Thr Glu Ser Glu Leu Ala
 370 375 380
 Ser Trp Gly Ile Asn Val Val Ile Tyr Ala Asn His Met Leu Arg Ser
 385 390 395 400
 Ala Tyr Pro Ala Met Leu Asp Cys Ala Lys Ser Ile Leu Thr His Glu
 405 410 415
 Arg Ser Leu Glu Ala Ser Asn Asp Tyr Cys Met Pro Ile Lys Glu Ile
 420 425 430
 Leu Glu Leu Ile Pro Gly Thr Lys Ala Leu Lys Arg
 435 440

<210> 6235

<211> 383

<212> PRT

<213> B.fragilis

<400> 6235

Thr Glu Ile Leu Gly Ile Met Lys Tyr Tyr Leu Ile Val Gly Glu Ala
 1 5 10 15
 Ser Gly Asp Leu His Ala Ser His Leu Met Ala Ala Leu Lys Glu Glu
 20 25 30
 Asp Pro Glu Ala Glu Phe Arg Phe Phe Gly Gly Asp Leu Met Ala Ala
 35 40 45
 Val Gly Gly Thr Met Val Lys His Tyr Lys Glu Leu Ala Tyr Met Gly
 50 55 60
 Phe Ile Pro Val Leu Leu His Leu Thr Thr Ile Phe Ala Asn Met Lys
 65 70 75 80
 Arg Cys Lys Glu Asp Ile Val Ala Trp Ser Pro Asp Val Val Ile Leu
 85 90 95
 Val Asp Tyr Pro Gly Phe Asn Leu Asp Ile Ala Lys Phe Val His Ala
 100 105 110
 Lys Thr Lys Ile Pro Val Tyr Tyr Tyr Ile Ser Pro Lys Ile Trp Ala
 115 120 125
 Trp Lys Glu Tyr Arg Ile Lys Asn Ile Lys Arg Asp Val Asp Glu Leu
 130 135 140
 Phe Ser Ile Leu Pro Phe Glu Val Gly Phe Phe Lys Gly His Arg Tyr
 145 150 155 160
 Pro Ile His Tyr Val Gly Asn Pro Thr Val Asp Glu Val Thr Ala Phe
 165 170 175
 Lys Ala Ser His Gln Glu Ser Phe Ala Asp Phe Ile Ala Asp Ser Glu
 180 185 190
 Leu Ala Asp Lys Pro Ile Ile Ala Leu Leu Ala Gly Ser Arg Lys Gln
 195 200 205
 Glu Ile Lys Asp Asn Leu Pro Asp Met Ile Arg Ala Ala Ser Ala Phe
 210 215 220

Pro Gly Tyr Gln Leu Val Leu Ala Ala Ala Pro Gly Ile Ser Pro Glu
 225 230 235 240
 Tyr Tyr Ala Lys Phe Val Lys Gly Thr Glu Leu Ala Val Ile Phe Asp
 245 250 255
 Arg Thr Tyr Arg Leu Leu Gln Gln Ala Asp Val Ala Leu Val Thr Ser
 260 265 270
 Gly Thr Ala Thr Leu Glu Thr Ala Leu Phe Arg Val Pro Gln Val Val
 275 280 285
 Cys Tyr His Thr Pro Val Gly Lys Leu Val Ser Phe Leu Arg Arg His
 290 295 300
 Ile Leu Lys Val Lys Phe Ile Ser Leu Val Asn Leu Ile Ala Gly Arg
 305 310 315 320
 Glu Val Val Arg Glu Leu Val Ala Asp Thr Met Thr Val Glu Asn Met
 325 330 335
 Arg Ala Glu Leu Glu Cys Leu Leu Phe Arg Glu Asp Tyr Arg Arg Lys
 340 345 350
 Met Leu Asp Gly Tyr Glu Glu Met Ala Arg Leu Leu Gly Pro Ala Gly
 355 360 365
 Ala Pro Arg His Ala Ala Arg Glu Met Val Lys Leu Leu Lys Lys
 370 375 380

<210> 6236

<211> 284

<212> PRT

<213> B.fragilis

<400> 6236

Lys Arg Asn Asn Thr Leu Lys Asn Asn Phe Leu Gln Arg Ala Ile Thr
 1 5 10 15
 Gly Ile Leu Phe Val Ala Ile Ile Val Gly Cys Ile Leu Tyr Asp Pro
 20 25 30
 Leu Ala Phe Gly Thr Leu Phe Val Ile Val Ser Ala Leu Thr Ile Arg
 35 40 45
 Glu Phe Gly His Leu Val Asn Gln Ser Gly Glu Val Ser Ile Asn Arg
 50 55 60
 Thr Ile Thr Met Leu Gly Ala Tyr Leu Phe Leu Ala Ile Met Gly
 65 70 75 80
 Phe Cys Ile Asp Ala Ala Gly Ser Lys Ile Phe Ile Pro Tyr Leu Ile
 85 90 95
 Leu Ile Ile Tyr Leu Met Val Ser Glu Leu Tyr Leu Lys Lys Lys Asn
 100 105 110
 Pro Val Leu Asn Trp Ala Tyr Ser Met Leu Ser Gln Met Tyr Ile Ala
 115 120 125
 Leu Pro Phe Ala Met Leu Asn Val Leu Ala Phe Gln Asn Asp Pro Glu
 130 135 140
 Ala Ser Ser Val Ser Tyr Asn Pro Ile Leu Pro Leu Ser Ile Phe Val
 145 150 155 160
 Phe Leu Trp Leu Asn Asp Thr Gly Ala Tyr Cys Phe Gly Ser Leu Phe
 165 170 175
 Gly Lys His Arg Leu Phe Glu Arg Ile Ser Pro Lys Lys Ser Trp Glu
 180 185 190
 Gly Ser Ile Gly Gly Gly Ile Val Ala Ile Ala Ser Ser Phe Val Phe
 195 200 205
 Ala Cys Tyr Phe Pro Ile Met Thr Trp Ala Glu Trp Ala Gly Leu Ala
 210 215 220
 Leu Val Val Val Ile Phe Gly Thr Trp Gly Asp Leu Thr Glu Ser Leu
 225 230 235 240
 Leu Lys Arg Gln Leu Gln Ile Lys Asp Ser Gly Ser Ile Leu Pro Gly
 245 250 255

His Gly Gly Met Leu Asp Arg Phe Asp Ser Ser Leu Met Ala Ile Pro
 260 265 270
 Ala Gly Val Ile Tyr Leu Tyr Ala Leu Thr Leu Val
 275 280

<210> 6237
 <211> 314
 <212> PRT
 <213> B.fragilis

<400> 6237
 Lys Lys Leu Lys Lys Cys Val Ile Phe Val Ala Asn Asn Thr Ile Leu
 1 5 10 15
 Ala Met Asn Ala Leu Gln Ser Asn Ile Ile Arg Glu Ile Thr Pro Leu
 20 25 30
 Ser Asp Lys Asp Cys Phe Tyr Ile Ala Glu Arg Tyr Lys Thr Glu Phe
 35 40 45
 Thr Tyr Pro Ile His Asn His Ala Glu Phe Glu Leu Asn Phe Thr Glu
 50 55 60
 Lys Ala Ala Gly Val Arg Arg Ile Val Gly Asp Ser Ala Glu Val Ile
 65 70 75 80
 Ser Asp Tyr Asp Leu Val Leu Ile Thr Gly Lys Asp Leu Glu His Val
 85 90 95
 Trp Glu Gln His Asp Cys His Ser Lys Glu Ile Arg Glu Ile Thr Ile
 100 105 110
 Gln Phe Ser Ser Asp Leu Phe Phe Lys Ser Phe Ile Asn Lys Asn Gln
 115 120 125
 Phe Asp Ser Ile Arg Asp Met Leu Glu Lys Ala Gln Lys Gly Leu Cys
 130 135 140
 Phe Pro Met Ser Ala Ile Leu Lys Ile Tyr Pro Leu Leu Asp Thr Leu
 145 150 155 160
 Ala Ser Glu Lys Gln Gly Phe Tyr Ala Val Ile Lys Phe Leu Thr Ile
 165 170 175
 Leu Tyr Glu Leu Ser Leu Phe Asn Glu Glu Ala Arg Thr Leu Ser Ser
 180 185 190
 Ser Ser Phe Ala Lys Ile Gly Ile His Ser Asp Ser Arg Arg Val Gln
 195 200 205
 Lys Val Gln Glu Tyr Ile Asn Ala His Tyr Gln Glu Glu Ile Arg Leu
 210 215 220
 Asn Gln Leu Ala Asp Met Val Gly Met Thr Pro Val Ser Phe Ser Arg
 225 230 235 240
 Phe Phe Lys Leu Arg Thr Gly Lys Asn Leu Ser Asp Tyr Ile Ile Asp
 245 250 255
 Ile Arg Leu Gly Phe Ala Ala Arg Leu Leu Val Asp Ser Thr Met Ser
 260 265 270
 Ile Ala Glu Ile Cys Tyr Glu Cys Gly Phe Asn Asn Leu Ser Asn Phe
 275 280 285
 Asn Arg Ile Phe Lys Lys Lys Lys Glu Cys Ser Pro Lys Glu Phe Arg
 290 295 300
 Glu Asn Tyr Arg Lys Lys Lys Lys Leu Val
 305 310

<210> 6238
 <211> 107
 <212> PRT
 <213> B.fragilis

<400> 6238
 Leu Lys Gln Lys Glu Ala Ile Met Lys Arg Ile Phe Thr Leu Tyr Leu

1		5		10		15									
Phe	Ile	Leu	Phe	Cys	Leu	Ile	Leu	Gln	Ala	Gln	Glu	Glu	Leu	Tyr	Glu
		20						25					30		
Arg	Val	Tyr	Val	His	Thr	Asp	Lys	Thr	Cys	Tyr	Leu	Ala	Gly	Glu	Glu
		35					40					45			
Val	Trp	Leu	Lys	Phe	Tyr	Thr	Ile	Asp	Thr	His	Phe	Arg	Pro	Ser	Ser
	50					55					60				
Phe	Ser	Lys	Val	Gly	Tyr	Ile	Glu	Ile	Ser	Asn	Thr	Glu	Arg	Pro	Lys
65					70					75					80
Ala	Gln	Leu	Lys	Leu	Ala	Leu	Asp	Asn	Gly	Ser	Gly	Ser	Gly	Lys	Val
			85						90					95	
Lys	Ile	Pro	Thr	Asp	Ala	Pro	Ser	Gly	Ile	Leu					
		100						105							

<210> 6239

<211> 288

<212> PRT

<213> B.fragilis

<400> 6239

Met	Ala	Lys	Lys	Thr	Lys	Ile	Tyr	Pro	Leu	Tyr	Ile	Ala	Leu	Leu	Leu
1			5						10					15	
Cys	Phe	Phe	Gln	Val	Ala	Gly	Ile	Asp	Val	Tyr	Ala	Gln	Glu	Pro	Val
			20					25					30		
Lys	Val	Ser	Gln	Asp	Ser	Ile	Ser	Pro	Val	Arg	Glu	Ala	Pro	Lys	Ala
		35				40					45				
Arg	Ala	Arg	Arg	His	Arg	Glu	Pro	Val	Val	Ser	Thr	Pro	Ala	Thr	Asp
	50					55				60					
Ser	Val	Lys	Val	Glu	Lys	Ala	Val	Val	Leu	Pro	Pro	Ile	Asp	Ser	Leu
65				70					75					80	
Glu	Asn	Leu	Lys	Pro	Ala	Ile	Val	Thr	Ala	Asp	Ser	Leu	Glu	Glu	Val
			85					90					95		
Asn	Arg	Gln	Asn	Leu	Glu	Arg	Ile	Glu	Thr	Pro	Val	Met	Pro	Ser	Val
			100					105					110		
Val	Lys	Ala	Asp	Ser	Leu	Pro	Pro	Val	Met	Pro	Lys	Lys	Leu	Phe	Val
		115				120						125			
Pro	Asn	Pro	Thr	Lys	Ala	Thr	Trp	Tyr	Ala	Ile	Val	Phe	Pro	Gly	Gly
	130					135					140				
Gly	Gln	Ile	Tyr	Asn	Arg	Lys	Tyr	Trp	Lys	Leu	Pro	Ile	Ile	Tyr	Gly
145				150						155				160	
Gly	Phe	Ala	Gly	Cys	Ala	Tyr	Ala	Leu	Ser	Trp	Asn	Gly	Lys	Met	Tyr
			165					170					175		
Lys	Asp	Tyr	Ala	Gln	Ala	Tyr	Met	Asp	Ile	Met	Asp	Asn	Asn	Pro	Asn
			180					185					190		
Thr	Asn	Ser	Phe	Gln	Asp	Leu	Leu	Pro	Pro	Asn	His	Asn	Tyr	Thr	Asp
		195				200						205			
Thr	Gln	Leu	Lys	Asp	Leu	Leu	Arg	Lys	Arg	Lys	Asp	Thr	Tyr	Arg	Arg
	210					215					220				
Tyr	Arg	Asp	Leu	Ser	Ile	Phe	Ala	Val	Ile	Gly	Val	Tyr	Leu	Ile	Ser
225					230					235				240	
Ile	Ile	Asp	Ala	Tyr	Val	Asp	Ala	Glu	Leu	Ser	Asn	Phe	Asp	Ile	Ser
			245					250					255		
Pro	Asp	Leu	Ser	Met	Arg	Val	Glu	Pro	Thr	Ile	Ile	Asn	Asn	Asn	Pro
			260					265					270		
Leu	Gln	Pro	Gly	Ser	Lys	Ser	Val	Gly	Val	Gln	Cys	Ser	Leu	Arg	Phe
		275					280						285		

<210> 6240

<211> 401

<212> PRT
 <213> B.fragilis

<400> 6240

Leu	Tyr	Met	Lys	Leu	Leu	Tyr	Ile	Gly	Ala	Phe	Cys	Glu	Pro	Ser	Thr
1			5					10					15		
Asp	Phe	Leu	Ile	Arg	Lys	Arg	Thr	Lys	Gly	His	Ile	Thr	Val	Ser	Ala
		20						25					30		
Thr	Thr	Phe	Gln	Lys	Ala	Leu	Leu	Ser	Gly	Phe	Glu	Asn	Leu	Glu	Lys
		35					40					45			
Lys	Leu	Asp	Tyr	Ile	Ile	Asn	Ile	Pro	Asp	Ile	Gly	Ser	Phe	Pro	Leu
	50					55					60				
Arg	Cys	Asn	Asn	Pro	Phe	Phe	Ser	Arg	Thr	Asn	Phe	Gln	Phe	Ala	Phe
65					70					75					80
Met	Lys	Gly	Val	Asn	Gly	Ser	Phe	Leu	Asn	Ile	Thr	Tyr	Leu	Lys	Lys
				85					90					95	
Tyr	Ser	Ile	Tyr	Gln	Ser	Val	Ile	Asn	Glu	Ala	Lys	Arg	Trp	Leu	Asn
			100					105					110		
Leu	His	Arg	Asp	Glu	Glu	Val	Thr	Ile	Ile	Val	Tyr	Ser	Leu	Met	Tyr
		115					120						125		
Pro	Tyr	Leu	Lys	Ala	Ala	Ile	Asp	Leu	Lys	Lys	His	Tyr	Ser	Asn	Met
	130					135						140			
Lys	Val	Cys	Cys	Ile	Val	Leu	Asp	Leu	Pro	Glu	Tyr	Phe	Gly	Asp	Asn
145					150					155					160
Ser	Ser	Ile	Leu	His	Arg	Val	Leu	Glu	Ala	Arg	Asn	Thr	Asn	Lys	Ile
				165					170					175	
Tyr	Ser	Leu	Val	Gln	Glu	Ile	Asp	Ser	Phe	Ile	Leu	Leu	Thr	Glu	Phe
			180					185						190	
Met	Lys	Asp	Lys	Leu	Arg	Val	Gly	Ile	Arg	Pro	Trp	Tyr	Leu	Leu	Glu
		195					200						205		
Gly	Ile	Tyr	Ser	Pro	Val	Glu	Val	Ala	Leu	Gln	Lys	Lys	Arg	Arg	Lys
	210					215						220			
Thr	Ile	Leu	Tyr	Thr	Gly	Lys	Leu	Asp	Ala	Arg	Phe	Gly	Ile	Arg	Asp
225					230					235					240
Leu	Ile	Glu	Ser	Phe	Ile	Lys	Ile	Asp	Asp	Arg	Glu	Phe	Ser	Leu	Trp
				245					250					255	
Ile	Cys	Gly	Phe	Gly	Thr	Asp	Arg	Ala	Phe	Val	Glu	Thr	Ala	Ala	Lys
		260						265						270	
Asn	Asp	Cys	Arg	Ile	Thr	Tyr	Trp	Gly	Leu	Val	Asp	Gln	Lys	Arg	Val
		275					280					285			
Phe	Glu	Met	Gln	Gln	Gln	Ala	Thr	Leu	Leu	Ile	Asn	Pro	Arg	Lys	Gly
	290					295					300				
Asp	Ala	Glu	Tyr	Thr	Lys	Tyr	Ser	Phe	Pro	Ser	Lys	Thr	Met	Glu	Tyr
305					310					315					320
Met	Ala	Ser	Gly	Thr	Pro	Thr	Ile	Met	Tyr	Lys	Leu	Pro	Gly	Leu	Pro
				325					330					335	
Ala	Asn	Tyr	Leu	Asn	His	Leu	Ile	Leu	Ile	Pro	Asp	His	Ser	Arg	Glu
			340					345					350		
Thr	Leu	Thr	Thr	Leu	Leu	Lys	Glu	Trp	Gly	Asn	Lys	Gly	Gln	Asp	Glu
		355					360						365		
Leu	Asp	Asp	Phe	Gly	Lys	His	Ala	Arg	Gln	Phe	Ile	Leu	Asp	Asn	Lys
	370					375					380				
Asn	Ser	Glu	Asn	Gln	Ala	Arg	Arg	Leu	Leu	Glu	Phe	Leu	Val	Asn	Lys
385					390					395					400
Thr															

<210> 6241
 <211> 342

<212> PRT
 <213> B.fragilis

<400> 6241

Asp	Met	Lys	Lys	Lys	Lys	Ile	Leu	Phe	Tyr	Ser	Ser	Val	Arg	Ser	Leu
1			5						10					15	
Glu	Leu	Leu	Asn	Thr	Gln	Lys	Phe	Tyr	Gln	Ile	Asp	Ile	Ala	Leu	Leu
			20					25					30		
Arg	Asn	Leu	Gly	Tyr	Asp	Val	Cys	Leu	Ser	Asn	Arg	Ile	Val	Asp	Ser
		35					40					45			
Leu	Lys	Phe	Trp	Glu	Tyr	Asp	Ile	Leu	Phe	Ser	Tyr	Phe	Tyr	Arg	Tyr
	50					55				60					
Ser	Phe	Phe	Ala	Ser	Phe	Phe	Ala	Lys	Cys	Leu	Gly	Lys	Arg	Thr	Tyr
65					70				75					80	
Phe	Thr	Gly	Gly	Ile	Asp	Asn	Leu	Asp	Glu	Asn	Tyr	Ala	Ser	Thr	Arg
				85				90						95	
Asn	Tyr	Lys	Ile	Gln	Val	Leu	Phe	Phe	Lys	Leu	Cys	Tyr	Trp	Val	Ser
			100					105					110		
Ser	Ser	Cys	Ile	Ile	Val	Ser	Gln	Ser	Asp	Leu	Lys	Asn	Ile	Ala	Lys
		115					120					125			
Val	Phe	His	Phe	Arg	Arg	Arg	Leu	Ser	Tyr	Ser	Glu	His	Val	Val	Asp
	130					135					140				
Thr	Ala	Gln	Phe	Met	Ser	Asp	Val	Pro	Lys	Glu	Lys	Leu	Phe	Thr	Thr
145					150					155					160
Val	Val	Trp	Met	Gly	Glu	Glu	Gly	Asn	Val	Arg	Arg	Lys	Gly	Val	Asp
				165				170						175	
Lys	Ala	Leu	Arg	Ile	Phe	Ala	Glu	Leu	Lys	Lys	Ile	Thr	Ser	Phe	Ser
			180				185						190		
Asp	Tyr	Arg	Phe	Ile	Ile	Met	Gly	Lys	Lys	Gly	Glu	Gly	Thr	Ala	Leu
		195				200					205				
Val	Gln	Ser	Leu	Ile	Asn	Glu	Tyr	Asp	Leu	Glu	Lys	Phe	Val	Glu	Leu
	210				215						220				
Val	Gly	Glu	Val	Ser	Glu	Glu	Glu	Lys	Ile	Ala	Phe	Leu	Lys	Arg	Ser
225				230						235					240
Lys	Tyr	Tyr	Phe	Gln	Leu	Ser	Leu	Tyr	Glu	Gly	Phe	Gly	Leu	Ala	Ala
			245					250						255	
Leu	Glu	Ala	Leu	Cys	Ala	Asn	Asn	Ile	Leu	Ile	His	Ser	Gly	Arg	Gly
			260				265						270		
Gly	Leu	Ala	Asn	Pro	Ile	Tyr	Thr	Asp	Gln	Leu	Leu	Phe	Asp	Ile	Asp
		275				280						285			
Asn	Asp	Phe	Asp	Lys	Glu	Phe	Ser	Ile	Leu	Thr	Lys	Lys	Leu	Ala	Ser
	290					295					300				
Phe	Thr	Ser	Leu	Ile	Pro	Asn	Asp	Glu	Val	Leu	Ser	Tyr	Tyr	Asp	Ile
305					310					315					320
Gln	Arg	Arg	Lys	Glu	Asp	Phe	Lys	Ala	Ile	Ile	Thr	Asp	Asn	Asn	Arg
			325					330						335	
Asn	Tyr	Lys	Leu	Asn	Asn										
			340												

<210> 6242
 <211> 124
 <212> PRT
 <213> B.fragilis

<400> 6242

Leu	Leu	Asn	Leu	Lys	Ser	Ile	Phe	Met	Lys	Ile	Lys	Lys	Leu	Phe	Thr
1				5					10					15	
Ile	Leu	Thr	Val	Leu	Cys	Phe	Ser	Ala	Leu	Ala	Gly	Val	Val	Phe	Leu
			20					25					30		

[illegible][illegible][illegible][illegible]

Asp Leu Glu Gly Val Ser
325

<210> 6244
<211> 251
<212> PRT
<213> B.fragilis

<400> 6244

Leu	Lys	Lys	Glu	Met	Lys	Lys	Ile	Lys	Leu	Leu	Trp	Met	Ala	Met	Leu
1				5					10					15	
Thr	Leu	Met	Leu	Pro	Ala	Leu	Gln	Ser	Cys	Asp	Asp	Asn	Asp	Gly	Tyr
			20					25					30		
Ser	Leu	Gly	Asp	Ile	Ala	Val	Asp	Trp	Ala	Thr	Val	Arg	Val	Val	Gly
		35					40					45			
Gly	Asp	Thr	Tyr	Ser	Leu	Asn	Ala	Asp	Arg	Trp	Gly	Thr	Leu	Trp	Pro
	50					55					60				
Ala	Ala	Thr	Ala	Ile	Pro	Phe	Tyr	Lys	Pro	Ile	Asp	Gly	Gln	Arg	Val
65					70					75					80
Ile	Thr	Tyr	Phe	Asn	Pro	Leu	Tyr	Asp	Asn	Tyr	Glu	Gly	Tyr	Asp	His
				85					90					95	
Ala	Val	Lys	Val	Glu	His	Asn	Tyr	Asn	Val	Leu	Thr	Lys	Gln	Val	Glu
			100					105					110		
Asp	Leu	Thr	Ala	Glu	Asn	Glu	Ser	Glu	Phe	Gly	Asn	Asp	Pro	Val	Trp
		115					120					125			
Val	Asn	Lys	Asp	Met	Met	Trp	Ile	Gly	Gly	Gly	Tyr	Leu	Asn	Val	Ile
	130					135					140				
Phe	Arg	Gln	Asn	Leu	Pro	Val	Lys	Glu	Lys	His	Leu	Val	Ser	Leu	Val
145					150					155					160
Arg	Asp	Lys	Trp	Ala	Thr	Ala	Ala	Glu	Gly	Glu	Asp	Asp	Gly	Tyr	Ile
				165				170						175	
His	Leu	Glu	Phe	Arg	Tyr	Asn	Thr	Tyr	Asp	Asp	Val	Thr	Ala	Arg	Gln
			180					185					190		
Ala	Asn	Gly	Ala	Val	Ser	Phe	Asn	Leu	Asn	Ser	Leu	Asp	Leu	Thr	Gly
		195					200					205			
Lys	Lys	Gly	Ile	Lys	Val	Lys	Leu	Asn	Ser	Val	Lys	Asp	Gly	Glu	Thr
	210					215					220				
Glu	Val	Val	Phe	Asn	Leu	Lys	Gly	Gln	Ser	Met	Pro	Glu	Glu	Ala	Lys
225					230					235					240
Gln	Val	Thr	Leu	Ser	Asp	Glu	Val	Gln	Ile	Lys					
				245					250						

<210> 6245
<211> 300
<212> PRT
<213> B.fragilis

<400> 6245

Ile	Asn	Glu	Asp	Met	Ala	Thr	Gln	Arg	Arg	Asn	Ala	Leu	Gly	Arg	Gly
1				5					10					15	
Leu	Asp	Ala	Leu	Leu	Ser	Met	Glu	Glu	Val	Lys	Thr	Glu	Gly	Ser	Ser
			20					25					30		
Ser	Ile	Asn	Glu	Ile	Glu	Leu	Ser	Lys	Ile	Ser	Val	Asn	Pro	Asn	Gln
		35					40					45			
Pro	Arg	Arg	Glu	Phe	Asp	Glu	Thr	Ala	Leu	Glu	Glu	Leu	Ala	Asp	Ser
	50					55					60				
Ile	Arg	Glu	Ile	Gly	Ile	Ile	Gln	Pro	Ile	Thr	Leu	Arg	Lys	Val	Ser
65					70					75					80
Asp	Asp	Glu	Tyr	Gln	Ile	Ile	Ala	Gly	Glu	Arg	Arg	Tyr	Arg	Ala	Ser

				85				90					95				
Gln	Lys	Ala	Gly	Leu	Asp	Thr	Ile	Pro	Ala	Tyr	Ile	Arg	Thr	Ala	Asp		
			100					105					110				
Asp	Glu	Asn	Val	Met	Glu	Met	Ala	Leu	Ile	Glu	Asn	Ile	Gln	Arg	Glu		
		115					120					125					
Asp	Leu	Asn	Ser	Val	Glu	Ile	Ala	Leu	Ala	Tyr	Gln	His	Leu	Ile	Glu		
	130					135					140						
Gln	Tyr	Asp	Leu	Thr	Gln	Glu	Arg	Leu	Ser	Glu	Arg	Val	Gly	Lys	Lys		
145					150					155					160		
Arg	Thr	Thr	Ile	Ala	Asn	Tyr	Leu	Arg	Leu	Leu	Lys	Leu	Pro	Ala	Pro		
				165					170					175			
Ile	Gln	Met	Ala	Leu	Gln	Asn	Lys	Gln	Ile	Asp	Met	Gly	His	Ala	Arg		
		180						185					190				
Ala	Leu	Ile	Thr	Leu	Gly	Asp	Pro	Lys	Leu	Gln	Val	Lys	Ile	Phe	Glu		
	195					200						205					
Glu	Ile	Leu	Glu	His	Gly	Tyr	Ser	Val	Arg	Lys	Val	Glu	Glu	Ile	Val		
	210				215						220						
Lys	Ser	Leu	Ser	Glu	Gly	Glu	Ala	Val	Lys	Ser	Gly	Thr	Lys	Lys	Ile		
225				230						235					240		
Thr	Pro	Lys	Arg	Ala	Lys	Leu	Pro	Glu	Glu	Phe	Asn	Met	Leu	Lys	Gln		
			245					250						255			
His	Leu	Ser	Gly	Phe	Phe	Asn	Thr	Lys	Val	Gln	Leu	Thr	Cys	Ser	Glu		
		260						265					270				
Lys	Gly	Lys	Gly	Lys	Ile	Ser	Ile	Pro	Phe	Ser	Asn	Glu	Glu	Glu	Leu		
	275					280						285					
Glu	Arg	Ile	Met	Glu	Ile	Phe	Asp	Ser	Leu	Lys	Lys						
	290					295					300						

<210> 6246

<211> 269

<212> PRT

<213> B.fragilis

<400> 6246

Thr	Ile	Tyr	Cys	His	Thr	Met	Ala	Trp	Thr	Ile	Met	Lys	Arg	Asn	Lys		
1			5					10						15			
Lys	Asn	Phe	Arg	Ile	Thr	Thr	Asn	Thr	Cys	Leu	Tyr	Pro	Glu	Leu	Asn		
		20					25					30					
Lys	Ile	Ser	Pro	Ala	Asn	Glu	His	Leu	Thr	Met	Gln	Ile	Ala	Ser	Gln		
	35					40					45						
Val	Tyr	Asn	Ile	Pro	Thr	Ala	Ala	Asn	Gly	Leu	Cys	Phe	Phe	Gln	Asn		
	50					55				60							
Asp	Glu	Pro	Ala	Tyr	Ile	Thr	Arg	Arg	Phe	Asp	Ile	Ala	Pro	Asn	Gly		
65					70				75					80			
Arg	Lys	Phe	Arg	Lys	Glu	Asp	Phe	Ala	Ser	Leu	Ala	Gly	Ile	Ser	Lys		
			85					90						95			
Gly	Asn	Lys	Gly	Pro	Asn	Tyr	Lys	Tyr	Asp	Val	Leu	Ser	Tyr	Glu	Glu		
	100						105						110				
Met	Ala	Asp	Ile	Ile	Lys	Gln	Tyr	Val	Ser	Ala	Ser	Ser	Val	Glu	Val		
	115					120						125					
Leu	Lys	Phe	Phe	Arg	Leu	Val	Ile	Phe	Asn	Phe	Leu	Phe	Ser	Asn	Gly		
	130					135					140						
Asp	Ala	His	Ala	Lys	Asn	Phe	Ser	Leu	Leu	Glu	Thr	Pro	Ser	Gly	Asp		
145				150						155					160		
Phe	Ile	Leu	Ala	Pro	Ala	Tyr	Asp	Leu	Leu	Asn	Thr	Arg	Leu	His	Ile		
			165					170						175			
Phe	Asp	Asp	His	Val	Phe	Ala	Leu	Gln	Arg	Gly	Leu	Phe	Lys	Glu	Asn		
	180							185					190				
Thr	Leu	Asn	Gly	Asn	Asp	Gly	Ala	Val	Thr	Gly	Lys	Glu	Phe	Ile	Glu		

	195		200		205										
Phe	Gly	Ile	Arg	Ile	Gly	Ile	Pro	Pro	Lys	Arg	Val	His	Lys	Glu	Leu
	210				215						220				
Ile	Ser	Phe	Cys	Gln	Lys	Ala	Glu	Gln	Val	Gln	Asp	Leu	Val	Glu	Lys
225					230					235					240
Ser	Phe	Leu	Pro	Asn	Gln	Leu	Lys	Lys	Gln	Tyr	Leu	Leu	His	Tyr	Gln
				245					250					255	
Met	Arg	Lys	Asp	Ser	Tyr	Leu	Ser	Val	Gly	Ile	Leu	Thr			
			260					265							

<210> 6247

<211> 480

<212> PRT

<213> B.fragilis

<400> 6247

Gln	Trp	Glu	Arg	Phe	Gly	Gln	Ser	Lys	Asp	Ser	Tyr	Arg	Arg	Ser	Phe
1				5					10					15	
Gly	Asn	Phe	Met	Ile	Trp	Thr	Glu	Ser	Thr	Arg	Tyr	Met	Arg	Asn	Glu
			20					25					30		
Gly	Glu	Lys	Val	Phe	Phe	Arg	Asn	Pro	Ile	Ala	Val	Ile	Asn	Thr	Ser
		35					40					45			
Arg	Val	Ser	Asp	Ser	Asp	Pro	Ile	Glu	Leu	Ala	Asp	Ser	Ala	Glu	Ile
	50					55					60				
Tyr	Pro	Lys	Gly	Lys	Pro	Gly	Thr	Thr	Glu	Asn	Ile	His	Ile	Lys	Thr
65				70						75					80
Ser	Arg	Ser	Asn	Tyr	Asn	Thr	Arg	Gln	Leu	Val	Glu	Leu	Thr	Ile	Asn
			85					90						95	
Arg	Leu	Pro	Asp	Glu	Val	Ser	Asp	Leu	Thr	Val	Ser	Val	Ser	Arg	Asn
			100					105					110		
Asp	Ser	Leu	Val	Thr	Leu	Pro	Pro	Leu	Glu	Glu	Ser	Thr	Trp	Ser	Lys
		115					120					125			
Gln	Val	Thr	Ala	Thr	Pro	Gly	Thr	Phe	Ser	Gly	Lys	Trp	Ile	Pro	Glu
	130					135					140				
Tyr	Glu	Gly	His	Ile	Ile	Cys	Gly	Gln	Ile	Glu	Ser	Pro	Thr	Gly	Glu
145				150						155					160
Thr	Leu	Lys	Gln	Val	Gln	Asn	Glu	Pro	Ile	Ser	Ala	Asp	Ile	Ala	Phe
			165						170					175	
Val	Gly	Lys	Asp	Ile	Arg	Tyr	Val	Gln	Gly	Gln	Val	Glu	Ser	Gly	Gly
		180						185					190		
Asn	Thr	Leu	Phe	Tyr	Thr	Ser	His	Val	Tyr	Gly	Thr	Asn	Asp	Val	Val
		195					200					205			
Ala	Ala	Ala	Trp	Asn	Ile	Asn	Gly	Glu	Pro	Phe	Arg	Met	Asn	Ile	Leu
	210					215					220				
Ser	Pro	Phe	Ser	Glu	Lys	Leu	Pro	Gln	Asn	Leu	Pro	Ser	Leu	Lys	Leu
225					230					235					240
Tyr	Arg	Asn	Lys	Lys	Arg	Leu	Leu	Glu	Arg	Ser	Ile	Gly	Ile	Gln	Leu
			245						250					255	
Gln	Gln	Val	Thr	Val	Leu	Asp	Ser	Leu	Asp	His	Ala	Ile	Pro	Leu	Gln
		260						265					270		
Ser	Cys	Tyr	Gly	Leu	Gln	Pro	Tyr	Leu	Asn	Tyr	Asn	Leu	Asp	Glu	Tyr
	275						280					285			
Thr	Arg	Phe	Asn	Thr	Met	Thr	Glu	Thr	Phe	Val	Glu	Phe	Val	Arg	Ser
	290					295					300				
Val	Ile	Ile	Arg	Lys	Val	Asn	Gly	Lys	Arg	Arg	Leu	Arg	Val	Leu	Lys
305				310					315						320
Glu	Gly	Glu	Lys	Arg	Phe	Asn	Ile	Gly	Asn	Thr	Leu	Val	Leu	Leu	Asp
			325						330					335	
Gly	Val	Pro	Ile	His	Asp	His	Glu	Asp	Ile	Leu	Lys	Tyr	Asn	Pro	Arg

340	345	350
Leu Val Lys Lys Ile Glu Ile Tyr Asn Gly Arg Tyr Gly Phe Gly Gly		
355	360	365
Glu Val Phe Glu Cys Met Ile Ser Leu Thr Thr Gln Arg Gly Asp Leu		
370	375	380
Pro Ser Ile Gln Leu Ser Asp Asp Ser Arg Leu Thr Val Tyr Glu Cys		
385	390	395
Pro Gln Leu Pro Val Thr Phe Lys Met Pro Glu Tyr Lys Asp Ala Thr		
405	410	415
Asp Lys Lys Ser Arg Arg Pro Asp Phe Arg His Thr Leu Tyr Trp Asn		
420	425	430
Pro Ser Val Glu Thr Glu Ala Gly Ile Asp Thr Thr Leu Ser Phe Tyr		
435	440	445
Thr Ser Asp Leu Glu Gly Glu Phe Lys Val Val Val Glu Gly Phe Thr		
450	455	460
Leu Lys Gly Glu Leu Ile Arg Gly Glu Val Asn Phe His Val Lys Lys		
465	470	475
		480

<210> 6248

<211> 316

<212> PRT

<213> B.fragilis

<400> 6248

Pro Cys His Ser Tyr Lys Arg His Asn Arg Thr Ile Glu Lys Cys Ser		
1	5	10
Gly Asn Asn Lys Leu Asn Asn Tyr Leu Ser Met Asn Glu Gly Leu Thr		
20	25	30
Lys Glu Tyr Arg Val Lys Leu Leu Glu Thr Phe Ala Ala Phe Asp Arg		
35	40	45
Phe Cys Lys Ala Asn Gly Ile Lys Tyr Tyr Ala Ala Tyr Gly Thr Leu		
50	55	60
Ile Gly Ala Val Arg His Lys Gly Leu Ile Pro Trp Asp Asp Asp Ile		
65	70	75
Asp Val Tyr Met Leu Arg Glu Asp Tyr Asp Lys Phe Cys Ser Leu Lys		
85	90	95
Gly Lys Val Met Asp His Tyr Asp Ile Met Asp Ile Asn Asp Asp Gly		
100	105	110
Tyr Trp Leu Ser Leu Ala Lys Phe Val Asp Thr Asn Thr Thr Leu		
115	120	125
Trp Glu Phe Lys Asn Arg Pro Leu Ile Leu Gly Val Tyr Ile Asp Val		
130	135	140
Phe Pro Leu Asp Glu Cys Asn Met Glu Gln Val Ile Thr Leu Lys Asn		
145	150	155
Arg Tyr Asp Lys Tyr Ser Leu Leu Val Ala Gln Ser Met Met Arg Tyr		
165	170	175
Ser Leu Gly Asp Ile Leu His Ser Leu Phe Arg Leu Lys Leu Lys Cys		
180	185	190
Leu Leu Leu Gln Ile Ser Cys Val Phe Tyr Lys Arg His Lys Tyr Ala		
195	200	205
Tyr Tyr Lys Gln Lys Tyr Leu Ser Cys Val Glu Asp Ile Lys Lys Ser		
210	215	220
Lys Gly Asn Phe Leu Val Ser Tyr Asp Gly Pro Tyr Gly Met Gly Glu		
225	230	235
Val Leu Asp Lys Lys Leu Phe Ser Glu Ser Val Leu Val Pro Phe Glu		
245	250	255
Ser Met Ser Ile Glu Val Pro Ile Gly Tyr Glu Glu Cys Leu Lys Ser		
260	265	270
Ile Tyr Gly Asp Tyr Met Lys Leu Pro Pro Lys Glu Lys Arg Ile Ser		

275 280 285
 His His Ser Arg Tyr Tyr Leu Asn Leu Asn His Arg Leu Ser Phe Ser
 290 295 300
 Glu Ile Ser Arg Glu Ile Ser Leu Arg Gly Lys Ile
 305 310 315

<210> 6249

<211> 925

<212> PRT

<213> B.fragilis

<400> 6249

Arg Ile Asp Arg Pro Lys Thr Asn Thr Met Lys Lys Ser Thr Tyr Leu
 1 5 10 15
 Trp Met Leu Pro Leu Leu Phe Ala Trp Pro Gln Gln Met Thr Ala Gln
 20 25 30
 His Pro Leu Ser Leu Pro Ala Asp Ser Ile Thr Ile Asp Ser Leu Leu
 35 40 45
 Glu Thr Val Glu Lys Asn Thr Pro Tyr Arg Ile Phe Ser Thr Ile Ser
 50 55 60
 Ala Pro Phe Lys Val Leu Val Lys Gly Lys Ala Ser Pro Leu Gln Gln
 65 70 75 80
 Leu Lys Glu Ala Leu Glu Pro Thr Pro Tyr Lys Leu Ser Val Ser Gly
 85 90 95
 Asn Asn Leu Phe Val Leu Lys Glu Gln Glu Leu Ile Thr Leu Leu Pro
 100 105 110
 Ala Lys Leu Thr Gly Glu Pro Glu Lys Gly Glu Ser Tyr Tyr Gly Asp
 115 120 125
 Val Tyr Thr Tyr Leu Ser Gly Glu Pro Glu Lys Ala Ser Ser Glu Asn
 130 135 140
 Lys Val Tyr Asn Val Gly Asp Val Arg Ile Lys Gln Pro Pro Arg Lys
 145 150 155 160
 Ala Val Leu Lys Gly Gln Val Thr Asn Phe Lys Thr Gly Glu Pro Met
 165 170 175
 Ile Gly Ile Asn Leu Ile Leu Lys Asp Pro Trp Ile Ala Thr Thr Thr
 180 185 190
 Asp Val Lys Gly Asn Phe Thr Leu Glu Leu Pro Thr Gly His Lys Gln
 195 200 205
 Ile Asp Ile Lys Gly Leu Asn Ile Lys Asp Thr Arg Arg Gln Ile Met
 210 215 220
 Leu Tyr Ser Asp Gly Thr Leu Asp Ile Glu Leu Glu Thr Thr His
 225 230 235 240
 Met Leu Asp Glu Val Thr Ile Thr Ser Gly Arg Ile Gln Asn Val Lys
 245 250 255
 Ser Thr Gln Leu Gly Ala Glu Thr Leu Arg Pro Thr Gln Leu Lys Asn
 260 265 270
 Ile Pro Met Ala Leu Gly Glu Val Asp Ile Leu Lys Met Val Gln Ala
 275 280 285
 Leu Pro Gly Val Lys Thr Val Gly Glu Ala Ser Ser Gly Phe Asn Val
 290 295 300
 Arg Gly Gly Ala Thr Asp Gln Asn Leu Ile Leu Leu Asn Asp Gly Thr
 305 310 315 320
 Ile Tyr Asn Pro Asn His Leu Phe Gly Phe Phe Ala Ala Phe Asn Ser
 325 330 335
 Asp Met Val Lys Glu Ala Glu Ile Tyr Lys Ser Ser Ile Pro Ala Gln
 340 345 350
 Tyr Gly Gly Arg Ile Ser Ser Ile Leu Asp Ile Thr Gly Lys Glu Ala
 355 360 365
 Asn Lys Glu Lys Phe Thr Gly Ser Ala Gly Ile Gly Leu Val Thr Ser

370 375 380
 Lys Leu Asn Leu Glu Ile Pro Ile Ile Lys Asp Arg Thr Ser Val Leu
 385 390 395 400
 Leu Ser Gly Arg Thr Thr Tyr Ser Asp Trp Ile Met Lys Gln Leu Pro
 405 410 415
 Glu Lys Ser Glu Tyr Lys Asn Gly Thr Ala Gly Phe Tyr Asp Leu Ala
 420 425 430
 Ala Ile Val Ala His Lys Phe Asn Asp Lys His Ser Leu Asn Val Tyr
 435 440 445
 Gly Tyr Tyr Ser His Asp Arg Phe Ala Phe Asn Ser Asn Glu Lys Tyr
 450 455 460
 Gly Tyr Asn Asn Leu Asn Ala Ser Ala Arg Trp Arg Ala Val Phe Asn
 465 470 475 480
 Glu Lys Leu Ile Gly Tyr Phe Ser Ala Gly Tyr Asp His Tyr Asp Tyr
 485 490 495
 Asn Asn Arg Glu Thr Val Asn Ala Ser Thr Ala Tyr Lys Leu Ser Phe
 500 505 510
 Asp Ile Asn Gln Tyr Phe Val Lys Ala Asp Phe Thr Asn Ile Leu Ala
 515 520 525
 Asp Lys His Thr Leu Asn Phe Gly Phe Lys Ser Met Leu Tyr His Ile
 530 535 540
 Asn Ser Gly Thr Tyr Glu Pro Glu Gly Ser Glu Ser Phe Val Lys Lys
 545 550 555 560
 Asp Val Leu Gln Lys Asp Lys Ala Leu Glu Thr Ala Phe Tyr Leu Gly
 565 570 575
 Asp Glu Trp Glu Ile Thr Pro Lys Leu Ser Val Asn Ala Gly Ile Arg
 580 585 590
 Tyr Ser Leu Phe Ser Ala Leu Gly Pro Arg Ser Tyr Tyr Gln Tyr Ala
 595 600 605
 Ser Gly Met Leu Pro His Glu Ser Thr Ile Thr Asp Thr Ile Thr Ala
 610 615 620
 Gly Ala Gly Lys Phe Met Lys Thr Tyr His Gly Pro Glu Phe Arg Leu
 625 630 635 640
 Ser Ala Arg Tyr Ala Phe Thr Asp Asn Phe Ser Val Lys Ala Gly Phe
 645 650 655
 Asn Ser Met Arg Gln Tyr Ile His Lys Leu Ser Asn Thr Val Ile Met
 660 665 670
 Ser Pro Thr Asp Thr Trp Lys Leu Ser Asp Val Asn Ile Lys Pro Gln
 675 680 685
 Arg Gly Trp Gln Ala Ala Ala Gly Leu Tyr Leu Asn Ser Pro Ser Gly
 690 695 700
 Ile Trp Glu Tyr Ser Val Glu Gly Tyr Tyr Lys Arg Met Ser Asp Tyr
 705 710 715 720
 Leu Asp Tyr Arg Gly Gly Ala Lys Leu Leu Met Asn His His Ile Glu
 725 730 735
 Thr Asp Val Ile Asn Thr Gln Gly His Ala Tyr Gly Val Glu Leu Gln
 740 745 750
 Val Lys Lys Gln Val Gly Lys Leu Asn Gly Trp Met Ser Tyr Thr Tyr
 755 760 765
 Ser Arg Thr Phe Leu Arg Gln Asn Asp Lys Arg Ile Glu Lys Pro Val
 770 775 780
 Asn Asn Gly Asp Trp Tyr Pro Thr Glu Tyr Asp Lys Pro His Asp Phe
 785 790 795 800
 Lys Phe Val Gly Asn Tyr Lys Phe Thr His Arg Tyr Ser Met Ser Ile
 805 810 815
 Asn Val Asp Tyr Ser Thr Gly Arg Pro Thr Thr Ile Pro Ala Gly Gln
 820 825 830
 Tyr Tyr Asp Glu Ser Thr Gln Ser Met Arg Val Tyr Tyr Thr Glu Arg
 835 840 845

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Asn Ser Tyr Arg Ile Pro Asp Tyr Phe Arg Thr Asp Ile Ser Phe Asn
 850 855 860
 Ile Glu Pro Ser His His Leu Thr Leu Leu Thr His Ser Ser Ile Ser
 865 870 875 880
 Ile Gly Val Tyr Asn Val Thr Gly Arg Lys Asn Val Tyr Ser Ile Tyr
 885 890 895
 Tyr Met Pro Glu Gly Gln Ile Lys Gly Tyr Gln Ile Ser Ile Phe
 900 905 910
 Gly Val Pro Ile Pro Phe Ile Thr Tyr Asn Ile Lys Phe
 915 920 925

<210> 6250

<211> 338

<212> PRT

<213> B.fragilis

<400> 6250

Gln Trp Cys Arg Asn Ile Leu Ser Asp Leu Phe Arg Arg Tyr Ala Cys
 1 5 10 15
 Phe Val Ser Glu Phe Ser Asp Phe Gln Glu Asn Pro Ile Leu Glu Glu
 20 25 30
 Val Asn Asn Gly Cys Asn Phe Phe Glu Lys Ser Lys Ser Asp Ile Ile
 35 40 45
 Ile Ala Cys Gly Gly Gly Ser Val Leu Asp Met Ala Lys Leu Ile Arg
 50 55 60
 Phe Lys Ala Ala Tyr Asp Gly Asp Leu Val Asp Ser Val Phe Glu Lys
 65 70 75 80
 Lys Lys Glu Leu Thr Pro Leu Ile Ala Leu Pro Thr Thr Ala Gly Thr
 85 90 95
 Gly Cys Glu Ala Thr Pro Phe Ala Val Cys Tyr Lys Asn Ser Ile Lys
 100 105 110
 Tyr Ser Val Ala His Asn Asp Met Leu Pro Asp Tyr Ala Val Ile Phe
 115 120 125
 Pro Gln Phe Thr Tyr Asn Asn Ser Ser Tyr Leu Thr Ala Cys Thr Gly
 130 135 140
 Phe Asp Ala Leu Ser Gln Ser Ile Glu Ala Tyr Trp Asn Val Asn Ala
 145 150 155 160
 Thr Ala Glu Ser Asp Glu Tyr Ala Lys Arg Ala Ile Ser Val Leu Trp
 165 170 175
 Asp Asn Leu Pro Lys Val Val Asn Ser Pro Ser Asn Glu Ile Arg Asp
 180 185 190
 Leu Met Ser Val Ala Ala Tyr Trp Ser Gly Cys Ala Ile Ala Ile Thr
 195 200 205
 Lys Thr Thr Ala Pro His Ala Phe Ser Tyr Ala Phe Thr Thr His Cys
 210 215 220
 Gly Tyr Pro His Gly His Ala Val Ala Leu Ser Phe Pro Phe Phe Met
 225 230 235 240
 Ala Leu Asn Leu Leu Glu Lys Gln Asp Phe Ala Phe Gln Pro Arg Ile
 245 250 255
 Asn Ile Asp Glu Tyr Tyr Lys Lys Thr Ala Trp Leu Gln Ser Gln Leu
 260 265 270
 Gly Phe Ser Asp Glu Ile Asn Ile Gln Ser Glu Met Gln Ser Tyr Leu
 275 280 285
 Asn Asn Ile Gly Leu Cys Asn Asn Gly Tyr Gly Asp Asn Asp Leu Thr
 290 295 300
 Ile Met Leu Asn Gln Val Asn Ile Gln Arg Leu Val Asn Asn Pro Val
 305 310 315 320
 Ile Val Thr Lys Asp Ile Ile Glu Arg Leu Lys Asn Val Leu Gly Thr
 325 330 335

Ile Asn

<210> 6251
 <211> 418
 <212> PRT
 <213> B.fragilis

<400> 6251

Leu	Leu	Cys	Gly	Val	Thr	Ser	Val	Leu	Ile	Pro	Val	Gly	Arg	Ile	Leu
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Ile	Leu	Lys	Lys	Phe	Asn	Ser	Ile	Met	Glu	Ile	Lys	Leu	Asp	Tyr	Ser
			20					25					30		
Asp	Ile	Lys	Phe	Arg	Tyr	Asp	Gly	Lys	Leu	Arg	Leu	Leu	Ile	Ile	Val
		35					40					45			
Gly	Thr	Arg	Pro	Glu	Ile	Ile	Arg	Leu	Ala	Ala	Val	Ile	Asn	Lys	Cys
	50					55					60				
Arg	Arg	Tyr	Phe	Asp	Cys	Ile	Leu	Ala	His	Thr	Gly	Gln	Asn	Tyr	Asp
65				70					75					80	
Tyr	Asn	Leu	Asn	Gly	Val	Phe	Phe	His	Asp	Leu	Ser	Leu	Gln	Ala	Pro
			85						90					95	
Asp	Val	Tyr	Met	Asp	Ala	Val	Gly	Asp	Asp	Leu	Gly	Ser	Thr	Met	Gly
			100					105					110		
Asn	Ile	Leu	Asn	Ala	Ser	Tyr	Lys	Leu	Met	Ser	His	Leu	Arg	Pro	Asp
		115					120					125			
Ala	Val	Leu	Val	Leu	Gly	Asp	Thr	Asn	Ser	Cys	Leu	Ser	Val	Ile	Ser
	130					135					140				
Ala	Lys	Arg	Leu	His	Ile	Pro	Ile	Phe	His	Met	Glu	Ala	Gly	Asn	Arg
145					150					155					160
Cys	Phe	Asp	Glu	Cys	Leu	Pro	Glu	Glu	Thr	Asn	Arg	Arg	Ile	Val	Asp
				165					170					175	
Ile	Ile	Ser	Asp	Met	Asn	Leu	Cys	Tyr	Ser	Glu	His	Ala	Arg	Arg	Tyr
			180					185					190		
Leu	Asn	Ala	Ser	Gly	Val	Ala	Lys	Glu	Arg	Thr	Tyr	Val	Thr	Gly	Ser
		195					200					205			
Pro	Met	Ala	Glu	Val	Leu	Ser	Glu	Asn	Leu	Ser	Ala	Ile	Glu	Ser	Ser
	210					215					220				
Asp	Ile	His	Ala	Arg	Leu	Gly	Leu	Arg	Lys	Gly	Gln	Tyr	Ile	Leu	Leu
225					230					235					240
Ser	Ala	His	Arg	Glu	Glu	Asn	Ile	Asp	Thr	Asp	Lys	Asn	Phe	Ala	Ser
				245					250					255	
Leu	Phe	Glu	Gly	Ile	Asn	Ala	Met	Ala	Glu	Lys	Tyr	Asp	Met	Pro	Val
			260				265						270		
Leu	Tyr	Ser	Cys	His	Pro	Arg	Ser	Arg	Asn	Arg	Leu	Glu	Ser	Ser	Gly
		275					280					285			
Phe	Lys	Leu	Asp	Ser	Arg	Val	Ile	Arg	His	Ala	Pro	Leu	Gly	Phe	His
	290					295					300				
Asp	Tyr	Asn	Cys	Leu	Gln	Met	His	Ala	Tyr	Ala	Val	Val	Ser	Asp	Ser
305					310					315					320
Gly	Thr	Leu	Pro	Glu	Glu	Ser	Ser	Phe	Phe	Thr	Ser	Val	Gly	His	Ser
				325					330					335	
Phe	Pro	Ala	Val	Cys	Ile	Arg	Thr	Ser	Thr	Glu	Arg	Pro	Glu	Ala	Leu
			340					345					350		
Asp	Lys	Gly	Cys	Phe	Ile	Leu	Ala	Gly	Ile	Asp	Lys	Ala	Ser	Leu	Leu
		355					360					365			
Gln	Ala	Val	Asp	Thr	Ala	Val	Glu	Met	Asn	Arg	Asn	Gly	Asp	Asn	Gly
	370					375					380				
Val	Pro	Val	Pro	Asp	Tyr	Met	Asp	Arg	Asn	Val	Ser	Thr	Lys	Val	Val
385					390					395					400

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60
 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120
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 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260
 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280
 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300
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 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340
 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360
 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380
 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400

Lys Leu Ile Gln Ser Tyr Thr Gly Ile Val Asn Lys Ile Val Trp Arg
 405 410 415
 Lys Ser

<210> 6252
 <211> 141
 <212> PRT
 <213> B.fragilis

<400> 6252
 Ile Glu Cys Gly Met Asp Met Gln Asp Val Lys Val Leu Asp Leu Pro
 1 5 10 15
 Lys Ile Leu Asp Lys Arg Gly Asn Leu Ser Ile Ile Gln Glu Val Glu
 20 25 30
 Asn Ile Pro Phe Lys Ile Lys Arg Ile Tyr Trp Ile Tyr Asp Val Pro
 35 40 45
 Gly Gly Glu Arg Arg Gly Gly His Ala Tyr Lys Lys Asn Gln Glu Phe
 50 55 60
 Ile Val Ala Leu Ser Gly Ser Phe Asp Val Val Leu Asp Asp Gly Asn
 65 70 75 80
 Cys Glu Lys Val Phe Ser Leu Asn Arg Ser Tyr Tyr Gly Ile Tyr Val
 85 90 95
 Pro Gln Gly Ile Trp Arg Lys Met Gln Asn Phe Ser Thr Asn Ala Leu
 100 105 110
 Ala Leu Val Leu Ser Ser Thr Asn Tyr Asp Pro Asp Asp Tyr Ile Leu
 115 120 125
 Glu Tyr Ile Asp Phe Val Gln Ser Lys Lys Asn Ser Leu
 130 135 140

<210> 6253
 <211> 197
 <212> PRT
 <213> B.fragilis

<400> 6253
 Leu Leu Met Gly Asn Leu Thr Glu Asn Asp Phe Gln Arg Val Ala Asp
 1 5 10 15
 Leu Leu Gly Ile Glu Val Ala Val Val Lys Ala Val Gln Ala Val Glu
 20 25 30
 Thr Ser Gly His Gly Gly Phe Val Ala Pro Gly Arg Pro Met Ile Leu
 35 40 45
 Phe Glu Gly His Ile Phe Trp Arg Glu Leu Lys Lys Arg Gly Leu Asp
 50 55 60
 Pro Glu Arg Tyr Val Ala Gly Asn Glu Asn Ile Leu Tyr Pro Lys Trp
 65 70 75 80
 Glu Lys Gly His Tyr Tyr Gly Gly Met Lys Glu Tyr Glu Arg Leu Glu
 85 90 95
 Lys Ala Trp Gln Ile His Lys Glu Ala Ala Asp Ala Ser Thr Ser Trp
 100 105 110
 Gly Met Phe Gln Val Met Gly Phe Asn Tyr Ala Met Cys Gly Tyr Gly
 115 120 125
 Ser Val Glu Glu Met Val Lys Asp Met Cys Val Gly Glu Asp Lys Gln
 130 135 140
 Leu Glu Ala Phe Ala Arg Phe Val Lys Leu Ala Lys Leu Gln Ser Tyr
 145 150 155 160
 Leu Glu Gln Lys Asp Trp Val Gly Phe Ala Lys Arg Tyr Asn Gly Pro
 165 170 175
 Gly Tyr Ala Arg Asn Gln Tyr Asp Lys Lys Leu Glu Gly Ala Tyr Arg

180
Lys Phe Thr Lys Glu
195

185

190

<210> 6254
<211> 166
<212> PRT
<213> B.fragilis

<400> 6254
Phe Lys Phe Ile Met Thr Leu Ser Glu Glu Val Ala Ser Leu Gln Arg
1 5 10 15
Ala Ala His Asp Leu Met Tyr Leu Gly Met Asp Gly Ser Pro Ile Tyr
20 25 30
Ser Asp Asp Leu Ser Arg Arg Asn Asn Glu Val Tyr Arg Leu Thr Thr
35 40 45
Thr Leu Tyr Asn Ser Gly Val Gln Gly Ser Thr Val Glu Glu Gln Ala
50 55 60
Ser Val Cys Leu Ala Leu Leu Met Gly Tyr Asn Ala Ser Phe Ile Asp
65 70 75 80
His Gly Glu Lys Arg Glu His Val Gln Lys Ile Leu Asp Arg Cys Trp
85 90 95
Asp Ile Leu Asp Thr Leu Pro Ala Ser Leu Leu Lys Leu Arg Leu Leu
100 105 110
Thr Ala Cys Tyr Gly Glu Val Phe Asp Glu Pro Leu Ala Asp Glu Ala
115 120 125
Arg Ser Ile Ile Ala Ser Trp Asp Ser Val Ser Leu Thr Thr Glu Gln
130 135 140
Gln Glu Ala Ile Asn Glu Phe Gln Thr Val Val Asp Asn Pro Tyr Pro
145 150 155 160
Trp Glu Tyr Val Glu Glu
165

<210> 6255
<211> 296
<212> PRT
<213> B.fragilis

<400> 6255
Val Leu Ile Met Lys Gly Ile Val Leu Ala Gly Gly Ser Gly Thr Arg
1 5 10 15
Leu Tyr Pro Ile Thr Lys Gly Val Ser Lys Gln Leu Leu Pro Ile Phe
20 25 30
Asp Lys Pro Met Ile Tyr Tyr Pro Ile Ser Val Leu Met Leu Ala Gly
35 40 45
Ile Arg Glu Ile Leu Ile Ile Ser Thr Pro Tyr Asp Leu Pro Gly Phe
50 55 60
Gln Arg Leu Leu Gly Asp Gly Ser Asp Tyr Gly Val Arg Phe Glu Tyr
65 70 75 80
Ala Glu Gln Pro Ser Pro Asp Gly Leu Ala Gln Ala Phe Ile Ile Gly
85 90 95
Glu Lys Phe Ile Gly Asp Asp Ser Val Cys Leu Val Leu Gly Asp Asn
100 105 110
Ile Phe Tyr Gly Asp Gly Leu Ile Glu Met Val Gln Ala Ala Val Lys
115 120 125
Lys Ala Asp Leu Glu Asn Lys Ala Thr Val Phe Gly Tyr Trp Val Ser
130 135 140
Asp Pro Lys Arg Tyr Gly Val Val Glu Phe Asp Lys Glu Gly Ser Val
145 150 155 160

Leu Ser Leu Glu Glu Lys Pro Arg Asp Pro Lys Ser Asn Tyr Ala Val
 165 170 175
 Ile Gly Leu Tyr Phe Tyr Pro Asn Val Val Ile Glu Leu Ala Lys Asn
 180 185 190
 Val Ile Pro Ser Ser Arg Gly Glu Leu Glu Ile Thr Ser Ile Asn Gln
 195 200 205
 Glu Phe Leu Tyr Lys Lys Met Leu Thr Val Gln Leu Leu Gly Arg Gly
 210 215 220
 Phe Ala Trp Leu Asp Thr Gly Thr His Asp Ser Leu Ala Glu Ala Ser
 225 230 235 240
 Thr Phe Ile Glu Val Ile Glu Lys Arg Gln Gly Leu Lys Ile Ala Cys
 245 250 255
 Leu Glu Asp Ile Ala Phe Gly Gln Arg Trp Ile Thr Ile Asp Lys Leu
 260 265 270
 Arg Lys Leu Ala Glu Lys Met Lys Asn Asn Gln Tyr Gly Lys Tyr Leu
 275 280 285
 Leu Lys Ile Val Glu Gly Leu Asn
 290 295

<210> 6256

<211> 265

<212> PRT

<213> B.fragilis

<400> 6256

Lys Cys Val Met Ala Lys Leu Tyr Pro Ile Gly Ile Gln Asn Phe Glu
 1 5 10 15
 Lys Ile Arg Arg Glu Gly Tyr Leu Tyr Ile Asp Lys Thr Ala Leu Val
 20 25 30
 Cys Arg Leu Val Lys Thr Gly Ser Tyr Tyr Phe Leu Ser Arg Pro Arg
 35 40 45
 Arg Phe Gly Lys Ser Leu Leu Ile Ser Thr Leu Glu Ala Tyr Phe Gln
 50 55 60
 Gly Lys Lys Asp Leu Phe Arg Gly Leu Ala Met Glu Glu Leu Glu Lys
 65 70 75 80
 Asp Trp Ile Lys Tyr Pro Ile Leu His Leu Asp Leu Asn Thr Glu Lys
 85 90 95
 Tyr Asp Thr Pro Glu Ser Leu Asp Arg Ile Leu Asn Asp Thr Leu Ala
 100 105 110
 Lys Trp Glu Met Val Tyr Gly Thr Ala Pro Ser Glu Thr Ser Ile Pro
 115 120 125
 Leu Arg Phe Lys Gly Ile Val Gln Arg Ala Cys Glu Gln Ser Gly Gln
 130 135 140
 Arg Val Val Ile Leu Ile Asp Glu Tyr Asp Lys Pro Met Leu Gln Ala
 145 150 155 160
 Ile Gly Asn Glu Glu Leu Gly Glu Lys Tyr Arg Asp Thr Leu Lys Gly
 165 170 175
 Phe Tyr Ser Val Leu Lys Thr Met Asp Gly Tyr Ile Arg Phe Ala Leu
 180 185 190
 Leu Thr Gly Val Thr Lys Phe Gly Lys Val Ser Val Phe Ser Asp Leu
 195 200 205
 Asn Asn Leu Asn Asp Ile Ser Met Asp Glu Pro Tyr Val Glu Leu Cys
 210 215 220
 Gly Ile Thr Glu Lys Glu Ile His His Tyr Leu Glu Pro Glu Ile Arg
 225 230 235 240
 Gln Leu Ala Lys Tyr Gln Lys Met Ser Tyr Glu Asp Ala Cys Arg Leu
 245 250 255
 His His Arg Ala Gly Arg Ile Leu Glu
 260 265

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<210> 6257
 <211> 295
 <212> PRT
 <213> B.fragilis

<400> 6257

Leu Ser Ser Met Glu Asn Glu Glu Thr Phe Ala Phe Leu Phe Gly Ser
 1 5 10 15
 Val Val Asp Thr Ser Ser Phe Cys Tyr Phe Cys Ala Phe Arg Lys His
 20 25 30
 Lys Ile Thr Asp Lys Val Asp Cys Met Glu Asn Lys Arg Pro Leu Ile
 35 40 45
 Leu Val Ser Asn Asp Asp Gly Ile Met Ala Lys Gly Ile Ser Glu Leu
 50 55 60
 Ile Lys Phe Leu Arg Pro Leu Gly Glu Ile Val Val Met Ala Pro Asp
 65 70 75 80
 Ala Pro Arg Ser Gly Ser Gly Cys Ala Leu Thr Val Thr Gln Pro Val
 85 90 95
 His Tyr Gln Leu Leu Lys Lys Asp Val Gly Leu Thr Val Tyr Lys Cys
 100 105 110
 Ser Gly Thr Pro Thr Asp Cys Ile Lys Leu Ala Arg Asn Gln Ile Leu
 115 120 125
 Asp Arg Lys Pro Asp Leu Val Gly Gly Ile Asn His Gly Asp Asn
 130 135 140
 Ser Ala Thr Asn Val His Tyr Ser Gly Thr Met Gly Ile Val Ile Glu
 145 150 155 160
 Gly Cys Leu Asn Gly Ile Pro Ser Ile Gly Phe Ser Ile Cys Asp His
 165 170 175
 Ala Pro Gly Ala Asp Phe Asp Ala Ala Gly Pro Tyr Val Arg Arg Ile
 180 185 190
 Ala Ala Met Val Leu Glu Lys Gly Leu Pro Pro Leu Thr Cys Leu Asn
 195 200 205
 Val Asn Phe Pro Asn Thr Gln Glu Ile Lys Gly Val Arg Ile Cys Glu
 210 215 220
 Gln Ala Lys Gly His Trp Ser Gly Glu Trp Gln Ala Cys Pro Arg Arg
 225 230 235 240
 Asp Asp Ala Asn Phe Tyr Trp Leu Thr Gly Glu Phe Ile Asp His Glu
 245 250 255
 Pro Glu Asn Glu Lys Asn Asp His Trp Ala Leu Ala Asn Gly Tyr Val
 260 265 270
 Ala Ile Thr Pro Thr Val Val Asp Met Thr Ala Tyr His Phe Met Asp
 275 280 285
 Glu Leu Lys Ser Trp Glu Leu
 290 295

<210> 6258
 <211> 182
 <212> PRT
 <213> B.fragilis

<400> 6258

Asn Asn Arg Ile Met Glu Val Glu Lys Glu Thr Glu Ile Trp Phe Ala
 1 5 10 15
 Met Arg Ala Thr Tyr Arg Arg Glu Thr Asp Ala Met Arg Leu Leu Ala
 20 25 30
 Lys Glu Asn Leu Gly Cys Phe Val Pro Met Gln Tyr Lys Ile Ser Ile
 35 40 45
 Lys Lys Gly Lys Lys Val Arg Val Leu Val Pro Ile Ile His Asn Leu

50		55		60
Ile Phe Ile His Ala Cys Pro Ser Glu Val Lys Arg Val Lys Ser Met				
65		70		80
Val Ala Tyr Leu Gln Tyr Ile Thr Asp Thr Arg Ser Gly Lys Lys Ile				
	85		90	95
Ile Ile Pro Asp Asn Glu Met Gln Arg Phe Ile Ala Val Ala Gly Thr				
	100		105	110
Tyr Ser Asp His Leu Leu Tyr Phe Gln Pro Asp Glu Leu Asn Leu Ser				
	115		120	125
Lys Gly Thr Lys Val Arg Ile Thr Gly Gly Asp Phe Glu Gly Gln Glu				
	130		135	140
Gly Val Phe Leu Lys Val Lys Gly Ala Arg Asp Arg Arg Val Val Ile				
145		150		160
Ala Ile Gln Gly Val Ile Ala Val Ala Met Ala Thr Ile His Pro Asp				
	165		170	175
Leu Ile Glu Val Ile Lys				
	180			

<210> 6259

<211> 680

<212> PRT

<213> B.fragilis

<400> 6259

Ser Ile Ser Met Asp Asn Asn Ser Lys Lys Pro Asn Asn Lys Val Asn				
1	5		10	15
Met Pro Lys Phe Asn Leu Asn Trp Met Tyr Met Ile Ile Ala Leu Met				
	20		25	30
Leu Leu Gly Leu Tyr Phe Ala Asn Gly Ser Ser Ser Val Ser Lys Asn				
	35		40	45
Ile Ser Tyr Asp Glu Phe Gln Gln Tyr Val Arg Asp Gly Tyr Val Ser				
	50		55	60
Lys Val Ile Gly Tyr Asp Asp Asn Ser Val Glu Ile Tyr Ile Lys Pro				
65		70		80
Gln Tyr Val Gly Thr Val Phe Lys Gln Asp Ser Thr Arg Val Gly Arg				
	85		90	95
Asn Pro Met Ile Thr Thr Glu Ala Pro Ser Arg Glu Asn Leu Asp Asn				
	100		105	110
Phe Leu Gln Lys Glu Lys Glu Glu Thr His Phe Asp Gly Ser Val Ser				
	115		120	125
Tyr Asp Lys Lys Lys Asp Tyr Phe Ser Ala Ile Leu Trp Asn Val Leu				
	130		135	140
Pro Ile Val Phe Leu Ile Ala Leu Trp Ile Phe Phe Met Arg Arg Met				
145		150		160
Gly Ser Gly Ala Ser Gly Gly Ala Gly Gly Val Phe Asn Val Gly Lys				
	165		170	175
Ser Lys Ala Gln Leu Phe Glu Lys Gly Gly Ser Ile Lys Val Thr Phe				
	180		185	190
Lys Asp Val Ala Gly Leu Ala Glu Ala Lys Gln Glu Val Glu Glu Ile				
	195		200	205
Val Glu Phe Leu Lys Glu Pro Gln Lys Tyr Thr Asp Leu Gly Gly Lys				
	210		215	220
Ile Pro Lys Gly Ala Leu Val Gly Pro Pro Gly Thr Gly Lys Thr				
225		230		240
Leu Leu Ala Lys Ala Val Ala Gly Glu Ala Asn Val Pro Phe Phe Ser				
	245		250	255
Leu Ala Gly Ser Asp Phe Val Glu Met Phe Val Gly Val Gly Ala Ser				
	260		265	270
Arg Val Arg Asp Leu Phe Lys Gln Ala Lys Glu Lys Ala Pro Cys Ile				

275	280	285
Val Phe Ile Asp Glu Ile Asp	Ala Val Gly Arg Ala Arg Gly Lys Asn	
290	295	300
Pro Ala Met Gly Gly Asn Asp	Glu Arg Glu Asn Thr Leu Asn Gln Leu	
305	310	315
Leu Thr Glu Met Asp Gly Phe Gly	Ser Asn Ser Gly Val Ile Ile Leu	
	325	330
Ala Ala Thr Asn Arg Val Asp Val	Leu Asp Lys Ala Leu Leu Arg Ala	
	340	345
Gly Arg Phe Asp Arg Gln Ile His	Val Asp Leu Pro Asp Leu Asn Glu	
	355	360
Arg Lys Glu Val Phe Gly Val His	Leu Arg Pro Ile Lys Ile Asp Asp	
	370	375
Thr Val Asp Val Asp Leu Leu Ala	Arg Gln Thr Pro Gly Phe Ser Gly	
385	390	395
Ala Asp Ile Ala Asn Val Cys Asn	Glu Ala Ala Leu Ile Ala Ala Arg	
	405	410
His Gly Lys Lys Phe Val Gly Lys	Gln Asp Phe Leu Asp Ala Val Asp	
	420	425
Arg Ile Ile Gly Gly Leu Glu Lys	Lys Thr Lys Ile Thr Thr Glu Ala	
	435	440
Glu Arg Arg Ser Ile Ala Leu His	Glu Ala Gly His Ala Ser Ile Ser	
	450	455
Trp Leu Leu Glu Tyr Ala Asn Pro	Leu Ile Lys Val Thr Ile Val Pro	
465	470	475
Arg Gly Arg Ala Leu Gly Ala Ala	Trp Tyr Leu Pro Glu Glu Arg Gln	
	485	490
Ile Thr Thr Lys Glu Gln Met Leu	Asp Glu Met Cys Ala Thr Leu Gly	
	500	505
Gly Arg Ala Ala Glu Asp Leu Phe	Ile Gly Arg Val Ser Ser Gly Ala	
	515	520
Ala Asn Asp Leu Glu Arg Val Thr	Lys Gln Ala Tyr Gly Met Ile Ala	
	530	535
Tyr Leu Gly Met Ser Glu Lys Leu	Pro Asn Leu Cys Tyr Tyr Asn Asn	
545	550	555
Asp Glu Tyr Ser Phe Gln Arg Pro	Tyr Ser Glu Lys Thr Ala Glu Leu	
	565	570
Ile Asp Glu Glu Val Lys Arg Met	Val Asn Glu Gln Tyr Glu Arg Ala	
	580	585
Lys Gln Ile Leu Ser Glu His Lys	Glu Gln His Asn Glu Leu Ala Gln	
	595	600
Leu Leu Ile Asp Lys Glu Val Ile	Phe Ala Glu Asp Val Glu Arg Ile	
	610	615
Phe Gly Lys Arg Pro Trp Ala Ser	Arg Ser Glu Glu Ile Met Ala Ala	
625	630	635
Asn Asn Lys Gln Glu Asn Ala Val	His Pro Ala Asp Gly Glu Asp Val	
	645	650
Asp Thr Thr Thr Pro Gln Ala Thr	Glu Ser Gln Glu Gly Asn Thr Gln	
	660	665
Gln Glu Ser Ala Ala Ser Gln Asn		670
	675	680

<210> 6260

<211> 140

<212> PRT

<213> B.fragilis

<400> 6260

Lys Glu Phe Ile Met Thr Val Phe Asp Cys Ser Ile Ile Glu Phe Pro

1	5	10	15
Lys Ile Glu Asp Arg Ser Gly Asn Ile Thr Pro Val His Ser Glu Glu			
20	25	30	
Asn Val Pro Phe Asp Ile Lys Arg Val Phe Tyr Ser Tyr Asp Ile Pro			
35	40	45	
Gly Gly Gly Ala Arg Gly Ala His Ala His Lys Glu Cys His Gln Cys			
50	55	60	
Leu Ile Ala Ala Ser Gly Ser Phe Glu Val Val Leu Asp Asp Gly Val			
65	70	75	80
Asn Arg Lys Thr Val Leu Leu Asn Arg Pro Tyr Tyr Gly Leu His Ile			
85	90	95	
Pro Pro Gly Val Trp Ala Ser Glu Gln Gly Phe Ser Ser Gly Ala Ile			
100	105	110	
Cys Leu Val Leu Ala Ser His Val Tyr Asp Glu Asn Asp Tyr Val Arg			
115	120	125	
Asn Tyr Gln Asn Phe Leu Asn Asn Lys Glu Ile Leu			
130	135	140	

<210> 6261
 <211> 198
 <212> PRT
 <213> B.fragilis

<400> 6261
Ser Val Thr Ile Met Phe Leu Tyr Gly Ala Ser Gly His Ala Lys Val
1 5 10 15
Ile Ile Asp Ile Leu Arg Ala Gly His Glu Ser Ile Glu Ala Leu Phe
20 25 30
Asp Asp Asn Val Glu Val Thr Ser Leu Leu Gly His Pro Val Leu Arg
35 40 45
Pro Ser Glu Val Arg Gly Pro Leu Ile Val Ser Ile Gly Asn Asn Arg
50 55 60
Ile Arg Lys Arg Ile Val Asp Thr Leu Ser Val Glu Phe Gly Cys Ala
65 70 75 80
Ile His Pro Leu Ser Ile Val Ser Glu Phe Ala Asp Ile Gly Glu Gly
85 90 95
Ser Val Val Met Gln Gly Ser Ile Ile Gln Val Cys Ala Gln Val Gly
100 105 110
Arg His Cys Ile Ile Asn Thr Gly Ala Ser Val Asp His Glu Cys Val
115 120 125
Ile Glu Asp Tyr Val His Ile Ser Pro His Ser Thr Leu Cys Gly Asn
130 135 140
Val Leu Val Gly Glu Gly Ser Trp Ile Gly Ala Gly Thr Thr Ile Ile
145 150 155 160
Pro Gly Val Lys Ile Gly Lys Trp Ser Val Ile Gly Ala Gly Ser Val
165 170 175
Val Thr Lys Asp Ile Pro Asp His Val Leu Ala Val Gly Asn Lys Cys
180 185 190
Lys Ile Ile Lys Ser Ile
195

<210> 6262
 <211> 205
 <212> PRT
 <213> B.fragilis

<400> 6262
Ile Leu Lys Ile Ile Asp Cys Thr Leu Arg Val Lys Met Ile Arg Phe
1 5 10 15

Gly	Leu	Met	Thr	Phe	Pro	Gly	Leu	Val	Asn	Glu	Val	Leu	Met	Gly	Lys
			20					25					30		
Leu	Gly	Ile	Leu	Ser	Leu	Met	Phe	Cys	Thr	Ile	Val	Leu	Leu	Ser	Cys
		35					40					45			
Gly	Lys	Lys	Lys	Asn	Val	Tyr	Pro	Glu	Leu	Glu	Ala	Phe	Ile	Gly	Lys
	50					55					60				
Glu	Ile	Ile	Phe	Ser	Asp	Lys	Asn	Phe	Asn	Thr	Val	Gly	Asn	Lys	Ala
65					70					75					80
Phe	Lys	Asp	Gln	Phe	Leu	Leu	Ile	Ser	Tyr	Val	Asp	Ser	Gly	Asn	Cys
				85					90					95	
Thr	Pro	Cys	Ser	Leu	Glu	Lys	Met	Gln	Tyr	Met	Lys	Thr	Asn	Lys	Arg
			100					105					110		
Arg	Leu	Leu	Asp	Thr	His	Thr	Gly	Val	Leu	Met	Ile	Val	His	Glu	Lys
		115					120					125			
Asp	Thr	Phe	Thr	Val	Asn	Glu	Val	Phe	Arg	Gln	Met	His	Val	Ser	Tyr
	130					135					140				
Pro	Ile	Phe	Phe	Asp	Ser	Leu	Gly	Cys	Phe	Lys	Lys	Glu	Asn	Gly	Ile
145					150					155					160
Phe	Asp	Asn	Pro	Leu	Tyr	Gln	Asp	Phe	Val	Ile	Asp	Arg	Ser	Asn	Lys
				165					170					175	
Val	Val	Trp	Leu	Gly	Asn	Pro	Leu	Arg	Asn	Lys	Gln	Ser	Trp	Gln	Gln
			180					185					190		
Tyr	Glu	Lys	Ala	Ile	Ser	Met	Leu	Met	Asp	Ser	Gly	Lys			
		195					200					205			

<210> 6263

<211> 298

<212> PRT

<213> B.fragilis

<400> 6263

Val	Ile	Glu	Ile	Tyr	Val	Ile	Leu	Leu	Leu	Ile	Asn	Met	Val	Ser	Val
1				5					10					15	
Ile	Ile	Pro	Leu	Tyr	Asn	Lys	Tyr	Leu	Ala	Ile	Gly	Arg	Thr	Ile	Glu
			20					25				30			
Ser	Val	Ile	Val	Gln	Thr	Tyr	Lys	Asp	Trp	Glu	Leu	Leu	Ile	Ile	Asp
	35						40					45			
Asp	Gly	Ser	Asn	Asp	Gly	Ser	Gly	Gln	Val	Ala	Glu	Gln	Tyr	Thr	Phe
	50					55					60				
Asp	Glu	Arg	Ile	His	Tyr	Ile	Tyr	Lys	Ser	Asn	Gly	Gly	Val	Ser	Ser
65					70					75					80
Ala	Arg	Asn	Met	Gly	Ile	Gln	Met	Ala	Lys	Gly	Glu	Trp	Leu	Leu	Tyr
				85					90					95	
Ile	Asp	Ala	Asp	Asp	Tyr	Leu	Leu	Pro	Asn	Ala	Leu	Glu	Thr	Leu	Leu
			100					105					110		
Asn	Leu	Ala	Glu	Lys	Phe	Glu	Val	Ser	Ile	Ala	Ala	Ser	Asn	Phe	Tyr
		115					120					125			
Val	Glu	Phe	Glu	Gly	Lys	Lys	Arg	Arg	Cys	Leu	Tyr	Asn	Val	Ser	Glu
	130					135					140				
Gly	Val	Val	Leu	Asn	Asn	Phe	Arg	Ser	Leu	Phe	Phe	Asn	Ser	Phe	Asp
145					150					155					160
Ile	Arg	Ala	Gly	Ala	Thr	Leu	Tyr	Lys	Ser	Ser	Leu	Ile	Lys	Gln	Tyr
				165					170					175	
Lys	Phe	Asp	Glu	Thr	Leu	Ile	Arg	Tyr	Glu	Asp	Ala	Lys	Leu	Glu	Phe
		180						185					190		
Asp	Ile	Leu	Arg	Asn	His	Lys	Val	Ala	Ile	Thr	Pro	Gln	Phe	Thr	Met
		195					200					205			
Val	Tyr	Thr	Lys	Asp	Tyr	Ala	Gly	Leu	Ser	Lys	Pro	Ala	Ser	Asp	Phe
	210						215					220			

Ser	Lys	Asp	Tyr	Ile	Ser	Cys	Met	Ser	Phe	Glu	Gly	Lys	Pro	Phe	Trp
225					230					235					240
Glu	Lys	Met	Lys	Leu	Gly	Ser	Leu	Ala	Asn	Tyr	Gly	Leu	Asp	Ile	Tyr
				245					250					255	
Pro	Asn	Asn	Arg	Ser	Glu	Ile	Lys	Ala	Ile	Tyr	Ser	Asn	Asp	Leu	Lys
			260					265					270		
Trp	Ile	Tyr	Leu	Ser	Ala	Lys	Ile	Gly	Phe	Phe	Val	Tyr	Leu	Phe	Asn
	275						280					285			
Lys	Cys	Cys	Asn	Leu	Leu	His	Lys	Leu	Lys						
	290					295									

<210> 6264

<211> 498

<212> PRT

<213> B.fragilis

<400> 6264

Pro	Val	Glu	Ile	Asp	Leu	Lys	Pro	Ile	Asn	Asn	Ser	Phe	Met	Ser	Thr
1				5					10					15	
Ile	Leu	Asp	Leu	Ala	Pro	Gln	Asn	Val	Trp	Lys	His	Phe	Tyr	Ser	Leu
			20					25					30		
Thr	Gln	Ile	Pro	Arg	Pro	Ser	Gly	His	Met	Glu	Lys	Ile	Thr	Glu	Phe
	35						40					45			
Leu	Val	Asn	Phe	Gly	Asn	Ser	Leu	Gly	Leu	Lys	Thr	Phe	Val	Asp	Asp
	50					55				60					
Ala	Gly	Asn	Val	Ile	Ile	Arg	Lys	Pro	Ala	Thr	Pro	Gly	Met	Glu	Asn
65				70					75					80	
Arg	Lys	Gly	Val	Ile	Leu	Gln	Ala	His	Met	Asp	Met	Val	Pro	Gln	Lys
				85					90					95	
Asn	Asn	Asp	Thr	Val	His	Asp	Phe	Glu	Lys	Asp	Pro	Ile	Glu	Thr	Tyr
			100					105					110		
Ile	Asp	Gly	Glu	Trp	Val	Lys	Ala	Lys	Gly	Thr	Thr	Leu	Gly	Ala	Asp
	115						120					125			
Asn	Gly	Leu	Gly	Val	Ala	Ala	Ile	Met	Ala	Val	Leu	Glu	Asp	Gln	Asn
	130					135					140				
Leu	Lys	His	Gly	Pro	Leu	Glu	Ala	Leu	Ile	Thr	Lys	Asp	Glu	Glu	Thr
145					150					155					160
Gly	Met	Tyr	Gly	Ala	Phe	Gly	Leu	Lys	Pro	Gly	Thr	Val	Asn	Gly	Glu
				165					170					175	
Ile	Leu	Leu	Asn	Leu	Asp	Ser	Glu	Asp	Glu	Gly	Glu	Leu	Tyr	Ile	Gly
			180					185					190		
Cys	Ala	Gly	Gly	Met	Asp	Val	Thr	Ala	Ser	Leu	Glu	Tyr	Lys	Glu	Val
	195						200					205			
Ala	Pro	Glu	Glu	Gly	Asp	Ile	Ala	Ile	Arg	Val	Asn	Leu	Lys	Gly	Leu
	210					215					220				
Arg	Gly	Gly	His	Ser	Gly	Leu	Glu	Ile	Asn	Gln	Gly	Arg	Ala	Asn	Ala
225					230				235						240
Asn	Lys	Leu	Leu	Val	Arg	Phe	Ile	Arg	Glu	Ala	Val	Ala	Thr	Tyr	Glu
				245					250					255	
Ala	Arg	Leu	Ala	Ser	Trp	Glu	Gly	Gly	Asn	Met	Arg	Asn	Ala	Ile	Pro
		260					265						270		
Arg	Glu	Ala	His	Ala	Val	Val	Thr	Ile	Pro	Ala	Glu	Asn	Glu	Glu	Glu
	275						280					285			
Leu	Leu	Ala	Leu	Val	Lys	Tyr	Cys	Glu	Asp	Leu	Phe	Asn	Glu	Glu	Phe
	290					295					300				
Lys	Ala	Ile	Glu	Thr	Pro	Ile	Cys	Phe	Thr	Ala	Glu	Arg	Val	Glu	Leu
305					310					315					320
Pro	Ala	Gly	Glu	Val	Pro	Glu	Glu	Ile	Gln	Asp	Asn	Leu	Ile	Asp	Ala
				325					330					335	

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Ile Phe Ala Cys Gln Asn Gly Val Met Arg Met Ile Pro Thr Ile Pro
 340 345 350
 Asp Thr Val Glu Thr Ser Ser Asn Leu Ala Ile Ile Asn Ile Gly Glu
 355 360 365
 Gly Lys Ala Ser Phe Lys Ile Leu Ala Arg Ser Ser Ser Asp Ser Met
 370 375 380
 Lys Glu Cys Leu Thr Thr Ser Leu Glu Cys Cys Phe Ser Met Ala Gly
 385 390 395 400
 Met Lys Val Glu Met Thr Gly Gly Tyr Ser Gly Trp Gln Pro Asp Ile
 405 410 415
 Asn Ser Pro Ile Leu His Ala Met Lys Glu Ser Tyr Lys Lys Gln Phe
 420 425 430
 Gly Thr Glu Pro Ala Val Lys Val Ile His Ala Gly Leu Glu Cys Gly
 435 440 445
 Ile Ile Gly Ala Ile Ile Pro Gly Leu Asp Met Ile Ser Phe Gly Pro
 450 455 460
 Thr Leu Arg Ser Pro His Ser Pro Asp Glu Arg Ala Leu Ile Pro Thr
 465 470 475 480
 Val Gln Lys Phe Tyr Asp Phe Leu Ile Ala Thr Leu Glu Gln Thr Pro
 485 490 495
 Met Lys

<210> 6265
 <211> 1927
 <212> PRT
 <213> B.fragilis

<400> 6265
 Tyr Met Arg Ile Lys Leu Ile Cys Ile Ile Val Leu Leu Ser Met Gly
 1 5 10 15
 Met Met Ser Trp Thr His Ala Gln Ser Tyr Asp Arg Leu Trp Lys Gln
 20 25 30
 Val Glu Gln Ala Gln Gln Lys Ser Leu Pro Gln Thr Val Val Arg Leu
 35 40 45
 Thr Gly Glu Ile Tyr Gln Lys Ala Lys Ala Glu Lys Asn Ser Pro Gln
 50 55 60
 Met Leu Lys Ala Tyr Ile Trp Gln Met Lys Phe Arg Glu Glu Ile Thr
 65 70 75 80
 Pro Asp Ser Phe Tyr Val Ser Leu Asn Gly Leu Glu Gln Trp Ala Val
 85 90 95
 Thr Thr Asp Lys Pro Leu Asp Arg Ala Ile Leu His Ser Leu Ile Gly
 100 105 110
 Ser Met Tyr Ala Asp Tyr Ala Ser Gln Asn Arg Trp Lys Leu Asn Gln
 115 120 125
 Arg Thr Asp Leu Glu Glu Glu Ala Pro Ser Val Asp Ile Arg Glu Trp
 130 135 140
 Ser Lys Asn Gln Phe Val Thr Lys Val Met Thr Glu Ile Ala Val Thr
 145 150 155 160
 Phe Gln Asp Ser Leu Leu Leu Leu Asp Thr Ser Ser Arg Ser Tyr Ile
 165 170 175
 Pro Phe Val Glu Leu Gly Val Thr Ser Asp Tyr Tyr His His Asp Met
 180 185 190
 Tyr His Leu Leu Ala Ser Arg Ala Ile Thr Ser Leu Glu Asn Leu Ser
 195 200 205
 Gly Phe Gly His Asp Ser Leu Ile Asn Val Arg Ile Glu Glu Ile Tyr
 210 215 220
 Gln His Met Met Asn Ser Tyr His Arg Thr Asp Asn His Asp Ala Leu
 225 230 235 240

Leu Leu Thr Thr Leu Asp Tyr Leu Gln Trp Lys Arg Arg Thr Asp Ile
 245 250 255
 Asp Phe Arg Pro Tyr Arg Ala Pro Glu Gly Lys Leu Gly Leu Thr Gln
 260 265 270
 Asp Pro Tyr Leu Ala Ala Leu Asp Lys Leu Ile Ala Glu Asn Lys Ser
 275 280 285
 His Asp Val Cys Ala Glu Val Tyr Leu Leu Lys Ala Gln Ala Ala Met
 290 295 300
 Asp Ala Gly Val Pro Ala Ser Ala Leu Gln Leu Cys Glu Glu Ala Ile
 305 310 315 320
 Ser Arg Tyr Pro Asp Tyr Arg Arg Ile Asn Ala Leu Lys Glu Leu Lys
 325 330 335
 Gln Glu Ile Leu Arg Pro Asp Leu Thr Val Gln Ser Pro Ser Thr Val
 340 345 350
 Tyr Pro Gly Glu Glu Phe Asp Leu Lys Val Ser Phe Lys Asn Leu Lys
 355 360 365
 Asp Phe Thr Val Glu Leu Tyr Ala Ile Asn Leu Pro Ala Arg Pro Asn
 370 375 380
 Thr Val Glu Ala Pro Asn Asp Ala Phe Leu Lys Lys His Gly Arg Leu
 385 390 395 400
 Leu Ser Ser Glu His Tyr Val Leu Phe Pro Ser Asp Asp Tyr Lys Val
 405 410 415
 Lys Asp Ser Ile Tyr His Ile Lys Ala Pro Glu Thr Gly Leu Tyr Ala
 420 425 430
 Leu Arg Val Ile Pro Gly Val Lys Val Arg Ser Asn Val Ser Lys Phe
 435 440 445
 Leu Tyr Ser Thr Cys Phe Lys Val Leu Thr Arg Ser Leu Pro Ser Asn
 450 455 460
 Leu Ser Glu Val Ala Ile Leu Asp Ala Met Ser Gly Lys Pro Leu Gln
 465 470 475 480
 Gly Val Val Leu Ser Phe Phe Asp Arg Gln Asn Lys Gln Leu Leu Thr
 485 490 495
 Ala Thr Thr Asn Thr Glu Gly Lys Val Gln Phe Ala Ser Ser Glu Lys
 500 505 510
 Tyr Arg Tyr Leu Thr Ala Ala Lys Gly Asn Asp Thr Ala Met Pro Gln
 515 520 525
 Met Tyr Leu Trp Gly Gly Asp Tyr Asn Phe Ala Asp His Ser Lys Pro
 530 535 540
 Val Ser Val Val Thr Leu Leu Thr Asp Arg Ser Val Tyr Arg Pro Gly
 545 550 555 560
 Gln Thr Val Tyr Val Lys Gly Ile Ala Tyr Glu Gln Tyr Pro Asp Ser
 565 570 575
 Ala His Val Ile Ala Gly Gln Glu Tyr Thr Leu Thr Leu Ser Asp Ala
 580 585 590
 Asn Gly Gln Glu Ile Ser Ala Lys Lys Leu Arg Thr Asn Asp Phe Gly
 595 600 605
 Ser Phe Thr Ala Glu Phe Ile Leu Pro Ser Val Cys Leu Asn Gly Thr
 610 615 620
 Phe Ser Leu Asn Thr Gln Asn Gly Phe Arg Ser Ile Arg Val Glu Asp
 625 630 635 640
 Tyr Lys Arg Pro Thr Phe Asp Ile Thr Phe Glu Pro Val Thr Glu Ser
 645 650 655
 Tyr Arg Leu Gly Asp Arg Val Glu Leu Lys Gly Ser Val Lys Thr Phe
 660 665 670
 Ser Gly Val Pro Leu Gln Asp Ile Pro Val Thr Tyr Thr Ile Thr Arg
 675 680 685
 Ser Leu Tyr Thr Trp Arg Met Trp Gly Met Asn Pro Val Ile Leu Ala
 690 695 700
 Ser Asp Thr Val Arg Leu Gly Val Asp Gly Asn Phe Glu Ile Pro Val

705					710				715				720				
Asp	Leu	Lys	Pro	Asp	Thr	Ser	Asn	Pro	Asp	Leu	Gly	Asp	Gly	Asp	Asn		
				725					730				735				
Thr	Ser	Leu	Tyr	Tyr	Asp	Tyr	Lys	Val	Gln	Leu	Ser	Val	Thr	Asn	Val		
				740					745				750				
Ala	Gly	Glu	Thr	Gln	Thr	Ser	Glu	Thr	Ser	Leu	Arg	Ala	Gly	Lys	Thr		
				755					760				765				
Ser	Leu	Leu	Leu	Phe	Ala	Asp	Ile	Ser	Gly	Leu	Ile	Cys	Lys	Asp	Asp		
				770					775				780				
Ser	Met	Lys	Ala	Thr	Phe	Arg	Val	Asn	Asn	Leu	Asp	Arg	Lys	Pro	Val		
785					790					795				800			
Ser	Val	Glu	Gly	Ser	Tyr	Arg	Leu	Phe	Leu	Ile	Ser	Asp	Tyr	Gln	Lys		
				805					810				815				
Ser	Lys	Pro	Leu	Lys	Glu	Gln	Asp	Val	Ser	Asp	Gln	Pro	Ala	Leu	Ser		
				820					825				830				
Gly	Ser	Phe	Arg	Ser	Asn	Glu	Glu	Ile	Leu	Leu	Ser	Asp	Trp	Lys	Lys		
				835					840				845				
Leu	Pro	Ser	Gly	Ala	Tyr	Lys	Leu	Val	Ala	Ser	Val	Lys	Asp	Asp	Gln		
				850					855				860				
Gly	Arg	Lys	Val	Asp	Ala	Glu	Lys	Val	Val	Ile	Leu	Phe	Ala	Ser	Asp		
865					870					875				880			
Asp	Lys	Arg	Pro	Pro	Val	Ser	Met	Pro	Leu	Trp	Cys	Tyr	Glu	Val	Asn		
				885					890				895				
Thr	Arg	Phe	Asp	Ala	Ala	His	Pro	Ala	Leu	Phe	Tyr	Phe	Gly	Thr	Ser		
				900					905				910				
Glu	Lys	Asp	Thr	Tyr	Val	Leu	Met	Asp	Val	Phe	Cys	Gly	Asn	Lys	His		
				915					920				925				
Leu	Glu	Ser	Lys	Leu	Leu	His	Leu	Ser	Asp	Ser	Leu	Val	Arg	Phe	Glu		
				930					935				940				
Tyr	Pro	Tyr	Arg	Glu	Ala	Tyr	Gly	Asn	Gly	Leu	Gly	Ile	Thr	Phe	Val		
945					950					955				960			
Phe	Val	Arg	Lys	Gly	Val	Val	Tyr	Glu	Gln	Glu	Val	Ser	Leu	Ile	Lys		
				965					970				975				
Arg	Leu	Pro	Asp	His	Asn	Leu	Asn	Met	Arg	Trp	Asp	Val	Phe	Arg	Asp		
				980					985				990				
Lys	Leu	Arg	Pro	Gly	Gln	Glu	Glu	Glu	Trp	Lys	Leu	Thr	Ile	Arg	Asn		
				995					1000				1005				
Pro	Gln	Lys	Ser	Pro	Val	Leu	Ala	Glu	Met	Leu	Ala	Thr	Met	Tyr	Asp		
				1010					1015				1020				
Ala	Ser	Leu	Asp	Lys	Ile	Trp	Lys	Thr	Asn	Gln	Ser	Leu	Gln	Leu	His		
1025					1030					1035				1040			
Tyr	Gln	Leu	Ser	Val	Pro	Ile	Ala	Arg	Trp	Arg	Arg	Asp	Tyr	Val	Gly		
				1045					1050				1055				
Ser	Asn	Tyr	Phe	Tyr	Phe	Gly	Phe	Arg	Arg	Thr	Asp	Leu	Lys	Val	Pro		
				1060					1065				1070				
Pro	Phe	Ser	Tyr	Asp	His	Phe	Asp	Leu	Pro	Pro	Val	Leu	Tyr	Ala	Val		
				1075					1080				1085				
Ala	Glu	Met	Leu	Ser	Val	Thr	Asn	Asp	Ala	Ala	Pro	Thr	Thr	Arg	Tyr		
				1090					1095				1100				
Ala	Arg	Leu	Arg	Gly	Met	Gly	Ala	Ala	Lys	Pro	Gln	Met	Lys	Ser	Ala		
1105					1110					1115				1120			
Ala	Val	Ala	Asp	Val	Val	Phe	Glu	Ser	Glu	Met	Val	Pro	Val	Thr	Glu		
				1125					1130				1135				

Met Pro Gln Ser Leu Thr Thr Trp Asn Phe Arg Gly Tyr Ala His Thr
 1185 1190 1195 1200
 Gln Asp Met Met Thr Gly Gln Met Asp Ala Thr Ala Val Thr Ser Lys
 1205 1210 1215
 Glu Phe Met Leu Thr Pro Asn Leu Pro Arg Phe Val Arg Val Gly Asp
 1220 1225 1230
 His Thr Ser Met Ala Ala Ser Val Ser Asn Leu Thr Gly Lys Asn Leu
 1235 1240 1245
 Ser Gly Thr Val Lys Leu Val Leu Phe Asp Pro Met Thr Asp Gln Val
 1250 1255 1260
 Ile Ser Thr Gln Gln Lys Lys Phe Asn Ala Gly Ala Gly Gln Ser Val
 1265 1270 1275 1280
 Gly Val Ser Phe Leu Phe Thr Val Thr Asp Lys Tyr Glu Ile Leu Gly
 1285 1290 1295
 Cys Arg Met Ile Ala Glu Gly Gly Asn Phe Ser Asp Gly Glu Gln His
 1300 1305 1310
 Leu Leu Pro Val Leu Ser Asp Lys Glu Asn Leu Thr Glu Thr Leu Pro
 1315 1320 1325
 Met Pro Val Arg Gly Glu Gln Thr Arg Thr Phe Ser Leu Ala Asp Leu
 1330 1335 1340
 Phe Asn His His Ser Lys Thr Ala Thr Asn Arg Arg Leu Thr Val Glu
 1345 1350 1355 1360
 Phe Thr Ser Asn Pro Ala Trp Tyr Ala Val Gln Ala Leu Pro Ala Leu
 1365 1370 1375
 Ser Gln Pro Arg Asn Asp Asp Ala Ile Ser Trp Ala Thr Ser Trp Tyr
 1380 1385 1390
 Ala Asn Thr Met Ala Ser Tyr Ile Met Asn Ala Gln Pro Arg Ile Gln
 1395 1400 1405
 Ala Ile Phe Asp Ser Trp Lys Leu Gln Gly Gly Thr Lys Glu Ser Phe
 1410 1415 1420
 Leu Ser Asn Leu Gln Lys Asn Gln Glu Val Lys Asn Ile Leu Leu Ser
 1425 1430 1435 1440
 Glu Ser Pro Trp Val Met Glu Ala Thr Ser Glu Ser Glu Gln Lys Glu
 1445 1450 1455
 Arg Ile Ala Thr Leu Phe Asp Leu Asn Asn Ile Arg Asn Ser Asn Thr
 1460 1465 1470
 Ala Ala Leu Leu Lys Leu Lys Glu Leu Gln Leu Pro Asp Gly Ser Trp
 1475 1480 1485
 Ser Trp Tyr Lys Gly Met Asp Gly Ser Leu Phe Val Thr Asp Phe Ile
 1490 1495 1500
 Val Glu Gln Asn Ala Arg Ile Ala Leu Leu Thr Gly Lys Pro Leu Glu
 1505 1510 1515 1520
 Gly Gly Ala Leu Asp Met Gln Gln Val Ala Phe Gly Tyr Leu His Lys
 1525 1530 1535
 Glu Ala Leu Gln Glu Tyr Arg Ser Ile Arg Glu Ala Glu Lys Val Gly
 1540 1545 1550
 Asn Lys Ser Glu Gly Ile Ser Arg Ser Ala Leu Lys Tyr Leu Tyr Leu
 1555 1560 1565
 Ile Ala Val Ser Gly Glu Lys Val Pro Ala Ser Ala Lys Glu Gly Tyr
 1570 1575 1580
 Asp Tyr Phe Leu Ser Lys Val Ala Pro Ser Leu Ser Gln Gln Ser Val
 1585 1590 1595 1600
 Thr Glu Lys Ala Trp Ser Ala Ile Val Leu Gln Lys Ala Gly Lys Val
 1605 1610 1615
 Lys Glu Ala Gln Glu Phe Met Ala Ser Leu Lys Glu Tyr Leu Thr Gln
 1620 1625 1630
 Thr Asp Glu Gln Gly Met Phe Phe Asp Arg Thr Asp Ser Pro Tyr Ala
 1635 1640 1645
 Trp Asn Asn Leu Lys Val Pro Ala His Val Asp Val Met Glu Ala Phe

1185 1190 1195 1200
 1205 1210 1215
 1220 1225 1230
 1235 1240 1245
 1250 1255 1260
 1265 1270 1275 1280
 1285 1290 1295
 1300 1305 1310
 1315 1320 1325
 1330 1335 1340
 1345 1350 1355 1360
 1365 1370 1375
 1380 1385 1390
 1395 1400 1405
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 1425 1430 1435 1440
 1445 1450 1455
 1460 1465 1470
 1475 1480 1485
 1490 1495 1500
 1505 1510 1515 1520
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 1540 1545 1550
 1555 1560 1565
 1570 1575 1580
 1585 1590 1595 1600
 1605 1610 1615
 1620 1625 1630
 1635 1640 1645

1650 1655 1660
 Glu Met Val Gly Ser Asn Ala Thr Ile Val Glu Glu Met Lys Met Trp
 1665 1670 1675 1680
 Leu Leu Lys Gln Lys Gln Thr Gln Gln Trp Asp Ser Pro Val Ala Thr
 1685 1690 1695
 Ala Asp Ala Val Tyr Ala Leu Leu Tyr Arg Gly Thr Asn Leu Leu Asp
 1700 1705 1710
 Asn Gln Gly Asp Val Arg Ile Val Leu Gly Asn Glu Val Leu Glu Thr
 1715 1720 1725
 Ile Ser Pro Ala Lys Thr Thr Val Pro Gly Leu Gly Tyr Ile Lys Lys
 1730 1735 1740
 Thr Phe Thr Asp Lys Lys Thr Val Asn Thr Asp Glu Ile Ile Val Glu
 1745 1750 1755 1760
 Lys Arg Asp Pro Gly Ile Ala Trp Gly Ala Val Tyr Ala Gln Phe Glu
 1765 1770 1775
 Glu Asn Leu Asp Lys Val Val Arg Gln Gly Ser Gly Leu Asn Val Asp
 1780 1785 1790
 Lys Lys Leu Tyr Val Glu Thr Ile Val Asn Asn Asn Arg Arg Leu Gln
 1795 1800 1805
 Pro Val Ile Gly Lys Thr Gln Leu Lys Val Gly Asp Lys Val Val Val
 1810 1815 1820
 Arg Leu Thr Val Arg Leu Asp Arg Thr Met Asp Phe Val Gln Leu Lys
 1825 1830 1835 1840
 Asp Gln Arg Ala Ala Cys Leu Glu Pro Val Glu Val Leu Ser Gly Tyr
 1845 1850 1855
 Arg Asn Val Gly Asp Val Gly Cys Tyr Val Ala Val Lys Asp Ala Ser
 1860 1865 1870
 Thr Asp Phe Phe Phe Asp Thr Leu Asn Lys Gly Thr Tyr Val Leu Glu
 1875 1880 1885
 Tyr Ser Tyr Arg Val Asp Arg Ala Gly Ser Tyr Glu Ala Gly Ile Ala
 1890 1895 1900
 Thr Ile Gln Ser Ala Tyr Ala Pro Glu Tyr Ala Ala His Ser Ala Ser
 1905 1910 1915 1920
 Ala Arg Tyr Glu Val Ser Gln
 1925

<210> 6266
 <211> 362
 <212> PRT
 <213> B.fragilis

<400> 6266
 His Arg Val Ile Leu Phe Ser Ser Asn Asp Ser Cys Val Ile Val Ile
 1 5 10 15
 Val Tyr Ile Phe Leu Ile Phe Val Ser Thr Val Ile Phe Ile Ser His
 20 25 30
 Ile Tyr Val Lys Ser Glu Lys Val Asn Lys Ile Thr Ala Phe Leu Trp
 35 40 45
 Val Ile Met Met Thr Leu Phe Val Gly Ser Gln Asp Gly Ile Gly Asn
 50 55 60
 Asp His Ala Asn Tyr Ile Ala Gln Ile Lys Ser Pro Trp Ala Thr Pro
 65 70 75 80
 Gln Glu Pro Phe Thr Leu Phe Ile Phe Tyr Ile Ile Arg Ser Cys Asp
 85 90 95
 Leu Ser Val Tyr Val Phe Phe Tyr Ile Tyr Ala Phe Leu Thr Tyr Tyr
 100 105 110
 Phe Leu Tyr Lys Val Ile Leu Leu Ser Asp Lys Ser Ile Arg Phe Ile
 115 120 125
 Ile Val Met Met Ile Leu Gln Ser Leu Leu Phe Phe Gln Ser Phe Asn

130 135 140
 Leu Ile Arg Gln Ile Leu Ala Cys Ala Ile Phe Leu Tyr Gly Ile Ser
 145 150 155 160
 Leu Ile Leu Asn Asn Lys Lys Gly Tyr Trp Phe Leu Leu Leu Ala Cys
 165 170 175
 Leu Val His Tyr Ser Ala Phe Phe Gly Leu Leu Ile Val Trp Ile Ala
 180 185 190
 Ser Lys Ile Arg Val Ser Thr Val Met Leu Ile Val Tyr Ile Met Ser
 195 200 205
 Val Ala Leu Leu Tyr Thr Gly Phe Ile Gly Asp Phe Ile Ser Lys
 210 215 220
 Tyr Glu Phe Leu Ile Arg Met Thr Tyr Tyr Gly Tyr Tyr Leu Asp Ser
 225 230 235 240
 Ser Leu Ile Asn Asp Asp Val Ala Ala Asn Phe Gly Val Val Tyr Lys
 245 250 255
 Ile Thr Phe Ile Leu Cys Leu Val Val Tyr Thr Lys Arg Lys Phe Phe
 260 265 270
 Lys Ser Asn Gly Gln Ile Leu Leu Phe Asn Leu Phe Phe Val Gly Gln
 275 280 285
 Ile Leu Tyr Asn Leu Ser Ser Ala Asn Ile Thr Ile Gln Arg Ala Thr
 290 295 300
 Tyr Phe Pro Tyr Phe Ser Met Ile Leu Val Ile Pro Leu Leu Ala Lys
 305 310 315 320
 Cys Phe Ser Pro Tyr Trp Asn Ser Arg Leu Ala Leu Val Leu Tyr Ser
 325 330 335
 Leu Tyr Phe Leu Phe Ile Ser Ala Ser Leu Ala Ser Gln Asp Cys Pro
 340 345 350
 Tyr Val Pro Tyr Lys Asn Ile Ile Trp Asn
 355 360

<210> 6267

<211> 281

<212> PRT

<213> B.fragilis

<400> 6267

Arg Ala Ala Ile Arg Ala Ala Ser Leu His Thr Leu Ala Met Ser Ala
 1 5 10 15
 Pro Glu Asn Pro Gly Val Trp Arg Ala Ser Lys Ser Thr Ser Thr Val
 20 25 30
 Ser Ser Ile Leu Met Gly Arg Lys Cys Thr Pro Asn Thr Ser Leu Arg
 35 40 45
 Ser Phe Arg Ser Gly Lys Ser Thr Trp Ile Cys Arg Ser Lys Arg Pro
 50 55 60
 Ala Arg Ser Asn Ala Leu Ser Ser Thr Ser Thr Arg Leu Val Ala Ala
 65 70 75 80
 Arg Ile Ile Thr Pro Leu Phe Glu Pro Lys Pro Ser Ile Ser Val Ser
 85 90 95
 Asn Trp Phe Asn Val Phe Ser Arg Ser Ser Phe Pro Pro Ile Ala Gly
 100 105 110
 Phe Leu Pro Arg Ala Arg Pro Thr Ala Ser Ile Ser Ser Met Lys Thr
 115 120 125
 Ile Gln Gly Ala Phe Ser Leu Ala Cys Leu Lys Arg Ser Arg Thr Arg
 130 135 140
 Asp Ala Pro Thr Pro Thr Asn Ile Ser Thr Lys Ser Glu Pro Ala Lys
 145 150 155 160
 Glu Lys Lys Gly Thr Leu Ala Ser Pro Ala Thr Ala Phe Ala Ser Asn
 165 170 175
 Val Leu Pro Val Pro Gly Gly Pro Thr Asn Arg Ala Pro Leu Gly Ile

			180				185					190			
Leu	Pro	Pro	Arg	Ser	Val	Tyr	Phe	Trp	Gly	Ser	Phe	Lys	Asn	Ser	Thr
			195				200					205			
Ile	Ser	Ser	Thr	Ser	Cys	Leu	Ala	Ser	Ala	Ser	Pro	Ala	Thr	Ser	Leu
			210			215					220				
Lys	Val	Thr	Leu	Met	Glu	Pro	Pro	Phe	Ser	Lys	Ser	Trp	Ala	Phe	Asp
225					230					235					240
Phe	Pro	Thr	Leu	Asn	Thr	Pro	Pro	Ala	Pro	Pro	Leu	Ala	Pro	Leu	Pro
				245					250					255	
Met	Arg	Arg	Met	Lys	Asn	Ile	His	Lys	Ala	Ile	Arg	Lys	Thr	Ile	Gly
			260					265					270		
Ser	Thr	Phe	Gln	Ser	Ile	Ala	Leu	Lys							
			275				280								

<210> 6268

<211> 440

<212> PRT

<213> B.fragilis

<400> 6268

Pro	Met	Lys	Ile	Glu	Gln	Ile	Arg	Met	Lys	Lys	Leu	Ala	Asn	Tyr	Cys
1			5						10					15	
Pro	Leu	Ile	Leu	Leu	Phe	Leu	Phe	Ala	Thr	Pro	Lys	Val	Asn	Ala	Gln
			20					25					30		
Ser	Val	Asp	Val	Val	Ile	Arg	Asp	Asn	Gly	Lys	Glu	Arg	Gln	Glu	Ser
		35					40					45			
Ile	Glu	Leu	Pro	Lys	Ser	Met	Thr	Tyr	Pro	Leu	Asp	Ser	Leu	Leu	Asn
	50					55					60				
Asp	Trp	Lys	Ala	Lys	Asn	Tyr	Ile	Asp	Leu	Gly	Lys	Asp	Cys	Ser	Thr
65					70					75					80
Ala	Glu	Ile	Asn	Pro	Leu	Phe	Ser	Asp	Ser	Val	Tyr	Ile	Asp	Arg	Leu
			85					90						95	
Ser	Arg	Met	Pro	Thr	Val	Met	Glu	Met	Pro	Tyr	Asn	Glu	Ile	Val	Arg
			100					105					110		
Lys	Phe	Ile	Asp	Met	Tyr	Ala	Gly	Arg	Leu	Arg	Asn	Gln	Val	Ser	Phe
		115					120					125			
Met	Leu	Ser	Ala	Cys	Asn	Phe	Tyr	Met	Pro	Ile	Phe	Glu	Glu	Ala	Leu
	130					135					140				
Asp	Ala	Tyr	Asn	Leu	Pro	Leu	Glu	Leu	Lys	Tyr	Leu	Pro	Ile	Ile	Glu
145					150					155					160
Ser	Ala	Leu	Asn	Pro	Ser	Ala	Val	Ser	Arg	Ala	Gly	Ala	Gly	Gly	Leu
			165						170					175	
Trp	Gln	Phe	Met	Ile	Gly	Thr	Gly	Lys	Met	Tyr	Gly	Leu	Glu	Ser	Asn
			180					185					190		
Ser	Leu	Val	Asp	Asp	Arg	Arg	Asp	Pro	Ile	Lys	Ala	Thr	Trp	Ala	Ala
		195					200					205			
Ala	Arg	Tyr	Leu	Lys	Asp	Leu	Tyr	Asp	Ile	Tyr	His	Asp	Trp	Asn	Leu
	210					215					220				
Val	Ile	Ala	Ala	Tyr	Asn	Cys	Gly	Pro	Gly	Thr	Ile	Asn	Lys	Ala	Ile
225					230					235					240
Arg	Arg	Ser	Gly	Gly	Glu	Thr	Asp	Tyr	Trp	Ser	Ile	Tyr	Asn	Tyr	Leu
			245						250					255	
Pro	Lys	Glu	Thr	Arg	Gly	Tyr	Val	Pro	Ala	Phe	Ile	Ala	Ala	Asn	Tyr
			260					265						270	
Val	Met	Thr	Tyr	Tyr	Cys	Asp	His	Asn	Ile	Cys	Pro	Met	Glu	Thr	Asn
		275					280					285			
Ile	Pro	Glu	Ser	Thr	Asp	Thr	Ile	Gln	Val	Asn	Lys	Asn	Leu	His	Phe
	290					295					300				
Gln	Gln	Ile	Ala	Asp	Leu	Cys	Asn	Val	Pro	Met	Asp	Gln	Ile	Arg	Ser

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305 310 315 320
 Leu Asn Pro Gln Tyr Lys Lys Glu Ile Ile Pro Gly Glu Ser Lys Ser
 325 330 335
 Tyr Thr Leu Arg Leu Pro Gln Asn Ala Val Ser Ser Phe Ile Asp Arg
 340 345 350
 Gln Asp Thr Ile Tyr Ala His Arg Ala Gly Glu Leu Phe Lys Asn Arg
 355 360 365
 Arg Thr Val Ala Ile Arg Asp Ser Ser Ala Ser Lys Arg Arg Gly
 370 375 380
 Ser Ser Ala Lys Ala Gly Ser Gly Thr Pro Thr Tyr Tyr Lys Ile Lys
 385 390 395 400
 Asn Gly Asp Thr Leu Gly Ala Ile Ala Ala Lys Tyr Gly Val Arg Val
 405 410 415
 Lys Asp Leu Gln Asn Trp Asn Gly Leu Arg Gly Thr Asn Ile Ser Ala
 420 425 430
 Gly Lys Arg Leu Lys Ile Tyr Lys
 435 440

<210> 6269
 <211> 379
 <212> PRT
 <213> B.fragilis

<400> 6269
 Leu Ile His Val Arg Met Met Val Leu Lys Asn Lys Trp Lys Asn Arg
 1 5 10 15
 Phe Ile Leu Ile Leu Phe Met Val Gly Phe Val Phe Phe Ala Cys Lys
 20 25 30
 Glu Glu Thr Asp Leu Tyr Phe Asn Gly Asp Ile Thr Val Ile Lys Ser
 35 40 45
 Phe Asp Asn Asp Thr Leu Leu Ser Pro Val Lys Val Glu Leu Glu Asp
 50 55 60
 Ile Tyr Asp Gly Ser Val Leu Ala Tyr Asp Ser Leu Leu Phe Phe Thr
 65 70 75 80
 Ser His Lys Tyr Ser Asp Cys Trp Met Tyr Val Phe Ser Val Asn Ser
 85 90 95
 Gly Lys His Ile Ala Ser Leu Cys Pro Lys Gly Gln Gly Pro Asn Asp
 100 105 110
 Tyr Leu Ser Cys Lys Asn Ser Gln Phe Ile Arg Glu Asn Gly Glu
 115 120 125
 Leu Lys Leu Trp Val Arg Asp Asn Ala Lys Ser Ala Arg Leu Leu Asn
 130 135 140
 Ile Thr Lys Ser Ile Glu Thr Gly Ala Thr Val Cys Asp Ala Ile Ile
 145 150 155 160
 Pro Met Asp Trp Asn Lys Tyr Phe Val Tyr Pro Ala Thr Thr Leu Phe
 165 170 175
 Phe Leu Lys Asp Gly Tyr Ile Leu Gly Gln Asn Gln Cys Glu Glu Gln
 180 185 190
 Tyr Ser Lys Gly Lys Glu Tyr Ile Pro Arg Lys Phe Tyr Leu Tyr Lys
 195 200 205
 Asp Ser Leu Gly Asn Lys Val Lys Glu Tyr Lys Leu Phe Asn Arg Pro
 210 215 220
 Val Ile Leu Lys Asp Asp Lys Tyr Asp Val Leu Ser Gly Met Phe Tyr
 225 230 235 240
 Ala Asn His Ser Tyr Ile His Pro Asp Gln Thr Lys Val Ala Ile Ala
 245 250 255
 Met Gln Arg Val Ala Gln Ile Thr Ile Leu Asp Val Lys Ser Gly Lys
 260 265 270
 Gln Val Gly Tyr Arg Met Asp Asp Thr Leu Asp Phe Ser Asp Ile Glu

275	280	285
Gln Asn Leu Glu Cys Ile Arg Tyr Tyr Tyr Thr Ser Ala Ala Val Asn		
290	295	300
Ser Arg Tyr Ile Phe Ala Leu Tyr Ile Asp Gln Ala Glu Met Gly Gly		
305	310	315
Lys Tyr Pro Phe Lys Ser Lys Thr Val His Val Phe Asp Trp Glu Gly		
	325	330
Arg Pro Val Tyr Lys Ile Gln Leu Asp Lys Glu Ile Ser Trp Ile Thr		
	340	345
Leu Asp Pro Gln Asn Asn Arg Leu Tyr Ala Gln Gly Glu Asp Asp Ser		
	355	360
Ile Trp Ala Tyr Asp Val Ser Trp Leu Ser Lys		
370	375	

<210> 6270

<211> 272

<212> PRT

<213> B.fragilis

<400> 6270

Met Lys Leu Val Lys Pro Lys Lys Phe Leu Gly Gln His Phe Leu Lys		
1	5	10
Asp Leu Lys Val Ala Gln Asp Ile Ala Asp Thr Val Asp Thr Phe Pro		
	20	25
Asp Leu Pro Ile Leu Glu Val Gly Pro Gly Met Gly Val Leu Thr Gln		
	35	40
Phe Leu Val Lys Lys Glu Arg Leu Val Lys Val Val Glu Val Asp Tyr		
	50	55
Glu Ser Val Ala Tyr Leu Arg Glu Ala Tyr Pro Ser Leu Glu Asp Asn		
65	70	75
Ile Ile Glu Asp Asp Phe Leu Lys Met Asn Leu Gln Arg Leu Phe Asp		
	85	90
Gly His Pro Phe Val Leu Thr Gly Asn Tyr Pro Tyr Asn Ile Ser Ser		
	100	105
Gln Ile Phe Phe Lys Met Leu Asp Asn Lys Asp Leu Ile Pro Cys Cys		
	115	120
Thr Gly Met Ile Gln Lys Glu Val Ala Glu Arg Ile Ala Ala Gly Pro		
	130	135
Gly Ser Lys Thr Tyr Gly Ile Leu Ser Val Leu Ile Gln Ala Trp Tyr		
145	150	155
Arg Val Glu Tyr Leu Phe Thr Val Asn Glu Gln Val Phe Asn Pro Pro		
	165	170
Pro Lys Val Lys Ser Ala Val Ile Arg Met Thr Arg Asn Glu Thr Gln		
	180	185
Glu Leu Gly Cys Asp Pro Lys Leu Phe Lys Gln Ile Val Lys Thr Thr		
	195	200
Phe Asn Gln Arg Arg Lys Thr Leu Arg Asn Ser Ile Lys Pro Ile Leu		
	210	215
Gly Lys Asp Cys Pro Leu Thr Glu Asp Ala Leu Phe Asn Lys Arg Pro		
225	230	235
Glu Gln Leu Ser Val Gln Glu Phe Ile His Leu Thr Asn Gln Val Glu		
	245	250
Gln Ala Leu Lys Val Pro Ile Glu Pro Val Ser Gln Ile Glu Asn Pro		
	260	265
		270

<210> 6271

<211> 471

<212> PRT

<213> B.fragilis

<400> 6271

Thr	Asn	Lys	Val	Gly	Asn	Val	Ile	Tyr	Lys	Thr	Cys	Leu	Pro	Tyr	Tyr
1				5					10					15	
Tyr	Arg	Lys	Leu	Ser	Lys	Ala	Val	Ile	Met	Asn	Glu	Glu	Tyr	Ile	Asp
			20					25					30		
Asn	Val	Lys	Glu	Leu	Ile	Glu	Glu	Lys	Asp	Ala	Asp	Lys	Val	Lys	Glu
		35					40					45			
Leu	Leu	Ile	Asp	Leu	His	Pro	Ala	Asp	Ile	Ala	Glu	Leu	Cys	Asn	Glu
	50					55					60				
Leu	Asn	Pro	Glu	Glu	Ala	Arg	Phe	Val	Tyr	Arg	Leu	Leu	Asp	Asn	Glu
65					70				75						80
Thr	Ala	Ala	Asp	Val	Leu	Val	Glu	Met	Asp	Glu	Asp	Val	Arg	Lys	Glu
				85					90					95	
Phe	Leu	Asp	Ile	Leu	Pro	Ser	Glu	Thr	Ile	Ala	Lys	Arg	Phe	Val	Asp
			100					105					110		
Tyr	Met	Asp	Thr	Asp	Asp	Ala	Val	Asp	Leu	Met	Arg	Glu	Leu	Asp	Glu
		115					120					125			
Asp	Lys	Gln	Glu	Glu	Ile	Leu	Ser	His	Ile	Glu	Asp	Ile	Glu	Gln	Ala
	130					135					140				
Gly	Asp	Ile	Val	Asp	Leu	Leu	Lys	Tyr	Asp	Glu	Asn	Thr	Ala	Gly	Gly
145					150					155					160
Leu	Met	Gly	Thr	Glu	Met	Val	Thr	Val	Asn	Glu	Asn	Trp	Ser	Met	Pro
				165					170					175	
Glu	Cys	Leu	Lys	Glu	Met	Arg	Gln	Gln	Ala	Glu	Glu	Leu	Asp	Asp	Ile
			180					185					190		
Tyr	Tyr	Val	Tyr	Val	Ile	Asp	Asp	Asp	Glu	Arg	Leu	Arg	Gly	Ile	Phe
		195					200					205			
Pro	Leu	Lys	Lys	Met	Ile	Thr	Ser	Pro	Ser	Val	Ser	Lys	Val	Lys	His
		210				215					220				
Val	Met	Gln	Lys	Asp	Pro	Ile	Ser	Val	His	Val	Asp	Thr	Pro	Ile	Asp
225					230					235					240
Glu	Val	Ala	Gln	Ile	Ile	Glu	Lys	Tyr	Asp	Leu	Val	Ala	Ile	Pro	Val
				245					250					255	
Leu	Asp	Ser	Ile	Gly	Arg	Leu	Val	Gly	Gln	Ile	Thr	Val	Asp	Asp	Val
			260					265					270		
Met	Asp	Glu	Val	Arg	Glu	Gln	Ser	Glu	Arg	Asp	Tyr	Gln	Leu	Ala	Ser
		275					280					285			
Gly	Leu	Ser	Gln	Asp	Val	Glu	Thr	Asp	Asp	Asn	Val	Leu	Arg	Gln	Thr
	290					295					300				
Thr	Ala	Arg	Leu	Pro	Trp	Leu	Leu	Ile	Gly	Met	Ile	Gly	Gly	Ile	Gly
305					310					315					320
Asn	Ser	Met	Ile	Leu	Gly	Asn	Phe	Asp	Ser	Thr	Phe	Ala	Ala	His	Pro
				325					330					335	
Glu	Met	Ala	Leu	Tyr	Ile	Pro	Leu	Ile	Gly	Gly	Thr	Gly	Gly	Asn	Val
			340					345					350		
Gly	Thr	Gln	Ser	Ser	Ala	Leu	Val	Val	Gln	Gly	Leu	Ala	Asn	Ser	Ser
		355					360					365			
Leu	Asp	Ala	Lys	Asn	Thr	Phe	Lys	Gln	Val	Ser	Lys	Glu	Ala	Val	Val
	370					375					380				
Ala	Leu	Ile	Asn	Ala	Thr	Ile	Ile	Ser	Leu	Leu	Val	Tyr	Thr	Tyr	Asn
385					390					395					400
Phe	Ile	Arg	Phe	Gly	Ala	Thr	Ala	Thr	Val	Thr	Tyr	Ser	Val	Ser	Ile
				405					410					415	
Ser	Leu	Phe	Ser	Val	Val	Met	Phe	Ala	Ser	Ile	Phe	Gly	Thr	Leu	Val
			420					425					430		
Pro	Met	Thr	Leu	Glu	Lys	Met	Lys	Ile	Asp	Pro	Ala	Ile	Ala	Thr	Gly
		435					440					445			
Pro	Phe	Ile	Ala	Ile	Thr	Asn	Asp	Ile	Ile	Gly	Met	Met	Met	Tyr	Met

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64
 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96
 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112
 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128
 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144
 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160
 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176
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 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240
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 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288
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 497 498 499 500

450
Gly Ile Thr Val Leu Leu Ser
465 470

460

<210> 6272
<211> 367
<212> PRT
<213> B.fragilis

<400> 6272

Asn	Met	Glu	Val	Arg	Val	Trp	Asn	Tyr	Leu	Lys	Glu	Tyr	Ala	Ser	Ser
1				5					10					15	
Lys	Glu	Glu	Ile	Leu	Lys	Ala	Val	Glu	Asp	Val	Phe	Glu	Ser	Gly	Gln
			20					25					30		
Leu	Ile	Leu	Gly	Ala	Lys	Gly	Lys	His	Phe	Glu	Gln	Ala	Tyr	Ala	Glu
		35				40						45			
Tyr	Cys	Gly	Val	Ser	His	Gly	Val	Gly	Cys	Asp	Asn	Gly	Thr	Asn	Ala
50						55					60				
Ile	Ser	Leu	Ala	Leu	Leu	Ala	Val	Gly	Val	Lys	Pro	Gly	Asp	Glu	Val
65					70					75				80	
Ile	Thr	Val	Pro	Asn	Thr	Ala	Ile	Pro	Thr	Val	Ser	Ala	Ile	Val	Thr
				85					90					95	
Val	Gly	Ala	Thr	Pro	Val	Phe	Val	Asp	Ile	Asp	Pro	Leu	Thr	Tyr	Leu
			100					105						110	
Met	Asp	Val	Thr	Lys	Val	Glu	Ser	His	Ile	Thr	Glu	Lys	Thr	Lys	Cys
		115					120					125			
Ile	Leu	Pro	Val	His	Leu	Tyr	Gly	Gln	Cys	Val	Asp	Met	Asp	Glu	Leu
	130					135					140				
Ile	Ala	Leu	Ala	Trp	Lys	Tyr	Lys	Leu	Ser	Ile	Ile	Glu	Asp	Cys	Ala
145					150					155				160	
Gln	Ala	Gln	Gly	Ala	Glu	Tyr	Lys	Gly	Tyr	Lys	Ala	Gly	Ser	Met	Ser
				165					170					175	
Asn	Ala	Ser	Thr	Thr	Ser	Phe	Tyr	Pro	Thr	Lys	Ile	Leu	Gly	Ala	Tyr
			180					185						190	
Gly	Asp	Gly	Gly	Met	Ile	Ile	Thr	Asn	Asp	Ala	Glu	Val	Glu	Gly	Lys
		195					200					205			
Leu	Arg	Arg	Leu	Arg	Phe	Tyr	Gly	Ala	Glu	Lys	Met	Tyr	Tyr	Ala	Ile
	210					215					220				
Glu	His	Gly	Tyr	Asn	Ser	Arg	Leu	Asp	Glu	Val	Gln	Ala	Ala	Ile	Leu
225				230						235				240	
Leu	Thr	Lys	Leu	Pro	His	Leu	Asp	Gln	Tyr	Ile	Lys	Arg	Arg	Arg	Glu
				245					250					255	
Ile	Ala	Tyr	Leu	Tyr	Asn	Glu	Leu	Leu	Lys	Asp	Thr	Asn	Leu	Ile	Leu
			260					265						270	
Pro	Lys	Glu	Ala	Asp	Tyr	Gly	Lys	His	Ala	Tyr	Tyr	Leu	Tyr	Val	Val
		275					280						285		
Arg	His	Ser	Asn	Arg	Asp	Glu	Ile	Met	Ala	Ala	Leu	Lys	Glu	Asn	Asn
	290					295					300				
Ile	Phe	Val	Asn	Ile	Ser	Tyr	Pro	Trp	Pro	Ile	His	Thr	Met	Thr	Gly
305					310					315				320	
Tyr	Gln	Phe	Leu	Gly	Tyr	Lys	Glu	Gly	Asp	Phe	Pro	Glu	Thr	Glu	Ser
				325					330					335	
Ala	Ala	Lys	Glu	Ile	Phe	Ser	Leu	Pro	Met	Tyr	Pro	Thr	Leu	Thr	Asp
		340						345						350	
Glu	Glu	Val	His	Tyr	Val	Ser	Asp	Ile	Leu	His	Lys	Ile	Leu	Lys	
		355					360						365		

<210> 6273
<211> 379

<212> PRT
 <213> B.fragilis

<400> 6273

Lys	Pro	Leu	Phe	Leu	Tyr	Ser	Lys	Gln	Leu	Ile	Ile	Ile	Lys	Gln	Arg
1				5					10					15	
Arg	Met	Lys	Arg	Ser	Leu	Leu	Phe	Ile	Phe	Thr	Leu	Leu	Thr	Ile	Thr
			20					25					30		
Leu	Ser	Ala	Val	Ala	Gln	Pro	Arg	Ile	Ser	Ser	Asn	Lys	Glu	Thr	His
		35					40					45			
His	Phe	Gly	Gln	Ile	Glu	Trp	Lys	Arg	Pro	Val	Ser	Val	Glu	Tyr	Thr
	50					55					60				
Ile	Thr	Asn	Thr	Gly	Asp	Lys	Pro	Leu	Val	Leu	Thr	Asn	Val	Thr	Thr
65					70					75				80	
Ser	Cys	Ala	Cys	Ser	Val	Ala	Asn	Trp	Thr	Lys	Thr	Pro	Ile	Ala	Pro
				85					90					95	
Gly	Glu	Lys	Gly	Thr	Val	Ser	Ala	Thr	Phe	Asp	Ala	Lys	Ala	Leu	Gly
			100					105					110		
His	Phe	Asn	Lys	Ser	Ile	Gly	Ile	Tyr	Ser	Asn	Ala	Gln	Pro	Ser	Leu
		115					120					125			
Val	Tyr	Leu	Asn	Phe	Asp	Gly	Glu	Val	Val	Gln	Glu	Ile	Lys	Asp	Phe
	130					135					140				
Thr	Lys	Thr	His	Pro	Tyr	Ala	Ile	Gly	Gln	Ile	Arg	Ile	Asp	Arg	Thr
145					150					155				160	
Asp	Ile	Asp	Phe	Pro	Asp	Ala	His	Ser	Gly	Glu	Lys	Pro	Val	Ile	Thr
				165					170					175	
Leu	Gly	Val	Val	Asn	Leu	Ser	Asp	Arg	Pro	Tyr	Glu	Pro	Val	Leu	Met
			180					185					190		
His	Leu	Pro	Pro	Tyr	Leu	Lys	Met	Glu	Thr	Asn	Pro	Thr	Val	Leu	Leu
		195					200					205			
Lys	Gly	Lys	Lys	Gly	Thr	Ile	Thr	Leu	Thr	Leu	Asp	Thr	Lys	Gln	Leu
	210					215					220				
Met	Asp	Leu	Gly	Leu	Thr	Gln	Ser	Ser	Val	Tyr	Leu	Ala	Arg	Phe	Ala
225					230					235				240	
Gly	Asp	Lys	Val	Gly	Glu	Glu	Asn	Glu	Ile	Pro	Val	Ser	Ala	Val	Leu
			245						250					255	
Leu	Pro	Asp	Phe	Ser	Gly	Met	Thr	Glu	Gln	Asp	Lys	Ala	Val	Ala	Pro
		260						265					270		
Val	Ile	Arg	Leu	Ser	Glu	Ser	Lys	Ile	Asp	Leu	Ser	Gln	Val	Leu	Ala
		275					280					285			
Lys	Lys	Asn	Lys	Ala	Arg	Arg	Asp	Ile	Val	Ile	Thr	Asn	Thr	Gly	Lys
	290					295					300				
Ser	Pro	Leu	Gln	Ile	Ser	Lys	Leu	Gln	Val	Phe	Asn	Pro	Ala	Val	Gly
305					310					315				320	
Val	Ala	Leu	Lys	Lys	Thr	Val	Leu	Gln	Pro	Gly	Glu	Ser	Thr	Arg	Leu
			325						330					335	
Arg	Val	Thr	Val	Leu	Lys	Lys	Asn	Leu	Gly	Lys	Lys	Lys	Arg	His	Leu
		340						345					350		
Arg	Ile	Leu	Met	Ile	Thr	Asn	Asp	Pro	Val	Gln	Pro	Lys	Val	Glu	Ile
	355					360						365			
Asp	Val	Lys	Ala	Thr	Asn	Asn	Glu	Ser	His	Asn					
	370					375									

<210> 6274
 <211> 402
 <212> PRT
 <213> B.fragilis

<400> 6274

Leu	Arg	Ile	Phe	Arg	Ile	Met	Phe	Trp	Arg	Trp	Glu	Thr	Asn	Val	Lys
1				5					10					15	
Leu	Leu	Arg	Val	Tyr	Lys	Ile	Ile	Leu	Leu	Met	Asn	Lys	Arg	Ile	Trp
			20					25					30		
Leu	Ser	Leu	Ala	His	Met	Gly	Gly	Arg	Glu	Gln	Asp	Phe	Ile	Lys	Glu
		35				40						45			
Ala	Phe	Asp	Thr	Asn	Trp	Val	Val	Pro	Leu	Gly	Pro	Asn	Val	Asp	Ala
	50					55					60				
Phe	Glu	Gln	Ser	Leu	Val	Glu	Tyr	Leu	His	Glu	Asp	Arg	Tyr	Val	Val
65					70					75					80
Ala	Leu	Ser	Ala	Gly	Thr	Ala	Ala	Leu	His	Leu	Gly	Leu	Ile	Leu	Leu
				85					90					95	
Asp	Val	Lys	Pro	Gly	Asp	Glu	Val	Ile	Cys	Gln	Ser	Phe	Thr	Phe	Ala
			100					105					110		
Ala	Ser	Ala	Asn	Pro	Ile	Ser	Tyr	Leu	Glu	Ala	Lys	Pro	Val	Phe	Val
		115					120					125			
Asp	Ser	Glu	Lys	Asp	Thr	Trp	Asn	Met	Asp	Pro	Val	Leu	Leu	Glu	Glu
	130					135					140				
Ala	Ile	Lys	Asp	Arg	Leu	Arg	Lys	Thr	Gly	Arg	Leu	Pro	Lys	Ala	Ile
145					150					155					160
Ile	Pro	Val	His	Leu	Tyr	Gly	Met	Pro	Ala	Lys	Met	Asp	Glu	Ile	Met
				165					170					175	
Asp	Ile	Ala	Gly	Arg	Tyr	Gly	Ile	Ser	Val	Leu	Glu	Asp	Ala	Ala	Glu
			180					185					190		
Ala	Leu	Gly	Ser	Glu	Leu	Asn	Gly	Arg	Lys	Cys	Gly	Thr	Phe	Gly	Glu
		195					200					205			
Leu	Ala	Ala	Leu	Ser	Phe	Asn	Gly	Asn	Lys	Met	Ile	Thr	Thr	Ser	Gly
	210					215					220				
Gly	Gly	Ala	Leu	Ile	Cys	Arg	Thr	Glu	Glu	Glu	Ala	Arg	Gln	Thr	Lys
225					230					235					240
Phe	Tyr	Ala	Thr	Gln	Ala	Arg	Asp	Ala	Ala	Pro	His	Tyr	Gln	His	Thr
				245					250					255	
His	Ile	Gly	Tyr	Asn	Tyr	Arg	Met	Ser	Asn	Ile	Cys	Ala	Gly	Ile	Gly
		260					265					270			
Arg	Gly	Gln	Met	Phe	Val	Leu	Asp	Glu	His	Ile	Ala	Arg	Arg	Arg	Ala
		275					280					285			
Ile	His	Ser	Leu	Tyr	Val	Asp	Leu	Leu	Lys	Asp	Val	Ala	Gly	Ile	Thr
	290					295					300				
Val	Met	Glu	Asn	Pro	Asp	Ser	Arg	Phe	Ala	Ser	Asn	Phe	Trp	Leu	Thr
305					310					315					320
Cys	Ile	Leu	Val	Asp	Pro	Lys	Leu	Ala	Gly	Lys	Ser	Arg	Glu	Asp	Ile
				325					330					335	
Arg	Leu	Arg	Leu	Asp	Ser	Glu	Asn	Ile	Glu	Thr	Arg	Pro	Leu	Trp	Lys
			340					345					350		
Pro	Met	His	Leu	Gln	Pro	Val	Phe	Thr	Asp	Ala	Pro	Phe	Tyr	Gly	Asn
		355					360					365			
Gly	Thr	Ser	Glu	Arg	Leu	Phe	Asp	Ile	Gly	Leu	Cys	Leu	Pro	Ser	Gly
	370					375					380				
Pro	Thr	Leu	Thr	Asp	Glu	Asp	Ile	Arg	Arg	Val	Val	Asp	Thr	Ile	Arg
385					390					395					400
Ala	Ile														

<210> 6275

<211> 279

<212> PRT

<213> B.fragilis

<400> 6275

Met Gln Pro Phe Met Glu Leu Ser Ala Asn Tyr Ile Lys Arg Ile Glu
 1 5 10 15
 Ile Asp Gly Leu Trp Asp Arg Phe Asn Ile Val Trp Asp Leu Arg Pro
 20 25 30
 Asp Val Asn Ile Leu Ser Gly Ile Asn Gly Val Gly Lys Thr Thr Ile
 35 40 45
 Leu Asn Arg Ser Val Gly Tyr Leu Glu Gln Leu Ser Gly Glu Val Lys
 50 55 60
 Ser Asp Glu Lys Asn Gly Val His Ile Phe Phe Asp Asn Pro Glu Ala
 65 70 75 80
 Thr Tyr Ile Pro Tyr Asp Val Ile Arg Ser Tyr Asp Arg Pro Leu Ile
 85 90 95
 Met Gly Asp Phe Thr Ala Arg Met Ala Asp Lys Asn Val Lys Ser Glu
 100 105 110
 Leu Asp Trp Gln Leu Tyr Leu Leu Gln Arg Arg Tyr Leu Asp Tyr Gln
 115 120 125
 Val Asn Ile Gly Asn Lys Met Ile Glu Leu Leu Ser Ser Asn Asn Glu
 130 135 140
 Glu Glu Arg Ser Lys Ala Ala Thr Leu Ser Ile Ala Lys Arg Arg Phe
 145 150 155 160
 Gln Asp Met Val Asp Glu Leu Phe Ser Tyr Thr Arg Lys Lys Ile Asp
 165 170 175
 Arg Arg Arg Asn Asp Ile Ala Phe Tyr Gln Asp Gly Glu Leu Leu Phe
 180 185 190
 Pro Tyr Lys Leu Ser Ser Gly Glu Lys Gln Met Leu Val Ile Leu Leu
 195 200 205
 Thr Val Leu Val Gln Asp Asn Ala His Cys Val Leu Phe Met Asp Glu
 210 215 220
 Pro Glu Ala Ser Leu His Ile Glu Trp Gln Gln Lys Leu Ile Ser Met
 225 230 235 240
 Ile Arg Glu Leu Asn Pro Asn Val Gln Ile Ile Leu Thr Thr His Ser
 245 250 255
 Pro Ala Val Ile Met Glu Gly Trp Leu Asp Ala Val Thr Glu Val Ser
 260 265 270
 Asp Ile Ala Thr Ser Tyr Lys
 275

<210> 6276

<211> 100

<212> PRT

<213> B.fragilis

<400> 6276

Val Ser His Ser Gln Glu Ile Lys Lys Arg Val Ser Phe Ser Gly His
 1 5 10 15
 Pro Leu Pro Tyr Ala Ser Ala Ser His Thr Leu Leu Leu Phe Asp Phe
 20 25 30
 Pro Tyr Tyr Thr Arg Leu Gly Thr Asn Thr Ile Lys Asp Ser His Phe
 35 40 45
 Tyr Thr Arg Tyr Gly Ile Lys Val Gly Ala Ser Gln Glu Ser Ile Pro
 50 55 60
 Ile Trp Val Tyr Cys Tyr Ser Phe Tyr Leu Ile Thr Ser Met Thr Phe
 65 70 75 80
 Leu Ile Phe Ser Leu Glu Pro Thr Phe Ser Tyr Leu Leu His Phe Phe
 85 90 95
 Ser Thr Pro Ser
 100

<210> 6277

<211> 77
 <212> PRT
 <213> B.fragilis

<400> 6277

Glu	Ser	Arg	Lys	Cys	Asn	Gly	Gln	Thr	Val	Arg	Glu	Ser	Lys	Gly	Thr
1				5					10					15	
Tyr	Leu	Thr	Glu	Glu	Tyr	Val	Trp	Glu	Asn	Lys	Leu	Asp	Ile	Glu	Arg
			20					25					30		
Thr	Ala	Trp	Gln	Tyr	Asp	Pro	Tyr	Thr	His	Glu	Trp	Val	Asp	Met	Pro
			35				40					45			
Leu	Val	Ser	Lys	Gly	Lys	Lys	Gln	Ser	Glu	Glu	Leu	Pro	Glu	Pro	Glu
	50					55					60				
Tyr	Gly	Asp	Lys	Gln	Gln	Cys	Lys	Cys	Leu	Ser	Glu	Arg			
65					70					75					

<210> 6278
 <211> 519
 <212> PRT
 <213> B.fragilis

<400> 6278

Thr	Cys	Leu	Trp	Tyr	Arg	Lys	Ala	Lys	Asn	Asn	Leu	Lys	Asn	Phe	Gln
1				5					10					15	
Ser	Leu	Ser	Met	Val	Thr	Asn	Asn	Asn	Val	Ser	Val	Ser	Gln	Lys	Gly
			20					25					30		
Lys	Tyr	Gly	Ser	Val	Arg	Thr	Ser	Leu	Thr	His	Val	Tyr	Asn	Lys	Gly
			35				40					45			
Gln	Tyr	Pro	Asn	Gln	Lys	Leu	Asn	Lys	Ile	Thr	Tyr	Ser	Val	Ser	Gly
	50					55					60				
Asp	Met	Lys	Trp	Lys	Lys	Phe	Ser	Phe	Asp	Gly	Gly	Leu	Thr	Tyr	Asn
65					70				75						80
Lys	Arg	Phe	Tyr	Pro	Asn	Asp	Met	Gly	Ala	Gly	Tyr	Gly	Gly	Ser	Gly
				85				90						95	
Phe	Leu	Tyr	Asn	Leu	Leu	Val	Trp	Ser	Gly	Ala	Glu	Tyr	Asp	Ile	Arg
			100					105					110		
Asp	Tyr	Lys	Asn	Tyr	Trp	Ile	Lys	Gln	Asp	Glu	Gln	Gln	Asn	Trp	Met
	115						120					125			
Asp	Thr	Lys	Trp	Tyr	Asp	Asn	Pro	Tyr	Phe	Ile	Ala	Asn	Glu	Ile	Val
	130					135					140				
Arg	Ser	Ser	Asp	Tyr	Asp	Leu	Ile	Asn	Gly	Tyr	Leu	Ser	Ala	Asn	Tyr
					150				155						160
Asp	Phe	Thr	Pro	Trp	Leu	Asn	Leu	Ser	Leu	Arg	Ser	Gly	Leu	Asp	Ser
				165					170					175	
Tyr	Ser	Gln	Lys	Lys	Glu	Trp	Arg	Asn	Ala	Val	Ser	Ala	Val	Gly	Gly
			180					185					190		
Trp	His	Lys	Gln	Gly	Tyr	Tyr	Gly	Leu	Gln	Arg	Leu	Gly	Gly	Tyr	Ser
		195					200					205			
Leu	Asn	Asn	Asp	Leu	Ile	Leu	Ser	Ala	Asp	His	Lys	Phe	Gly	Asp	Phe
	210					215					220				
Asn	Val	Asp	Gly	Phe	Ile	Gly	Gly	Asn	Val	Tyr	Tyr	Trp	Lys	Ser	Asp
	225				230					235					240
Asn	Ile	Leu	Gly	Glu	Thr	Gln	Asn	Gly	Leu	Lys	Ile	Pro	Gly	Tyr	Tyr
			245					250						255	
Ser	Leu	Lys	Ser	Ser	Ile	Asp	Pro	Val	Lys	Thr	Thr	Ser	Gly	Ile	Thr
			260					265					270		
Lys	Lys	Leu	Val	Thr	Ser	Val	Tyr	Ala	Lys	Ala	Ser	Val	Ser	Trp	Lys
			275				280					285			
Ser	Thr	Leu	Phe	Leu	Asp	Val	Thr	Gly	Arg	Asn	Asp	Trp	Ser	Ser	Ser

290	295	300
Leu Pro Ser Glu Thr Arg Ser Tyr Phe Tyr Pro Ser Val Ala Gly Ser		
305	310	315
Val Val Leu Ser Gln Phe Ile Pro Met Pro Glu Val Ile Asp Phe Trp		
	325	330
Lys Val Arg Gly Ala Trp Thr Gln Thr Lys Ser Asp Leu Gly Val Tyr		
	340	345
Asp Thr Asn Asn Thr Tyr Ser Val Ser Thr Asp Leu Trp Asn Gly Glu		
	355	360
Ser Ala Ala Tyr Tyr Pro Thr Ser Ile Arg Gly Val Ala Val Lys Pro		
	370	375
Ser Ala Thr Arg Ser Tyr Glu Ile Gly Thr Ala Ile His Met Phe Lys		
385	390	395
Asn Arg Leu Lys Leu Asp Phe Thr Tyr Tyr Asn Lys Leu Tyr Tyr Asn		
	405	410
Leu Thr Arg Ser Ala Gly Ile Ser Asn Ser Ser Gly Phe Thr Ser Thr		
	420	425
Leu Ile Asn Ile Asp Glu Glu Tyr Val Gly Arg Gly Val Glu Leu Thr		
	435	440
Leu Ser Gly Asp Ile Ile Arg Thr Arg Asp Leu Lys Trp Glu Ser Ser		
	450	455
Phe Asn Trp Ser Arg Asp Arg Trp Tyr Tyr Thr Lys Ile Asp Pro Val		
465	470	475
Tyr Ser Thr Gln Lys Pro Trp Val Ala Val Gly Lys Arg Trp Asp Trp		
	485	490
Tyr Gly Ile Tyr Asp Trp Glu Arg Asp Ser Gln Gly Ser Leu His His		
	500	505
Gly Gly Gly Arg Ser Asn Val		
	515	

<210> 6279

<211> 274

<212> PRT

<213> B.fragilis

<400> 6279

Gln Thr Arg Phe Ala Thr Glu Arg Ile Cys Gly Ala Thr Gly Pro Phe		
1	5	10
Pro Asp Pro Asp Arg Ala Gly Pro Asn Ile Pro Phe Ser Ile Arg Arg		
	20	25
Thr Pro Phe Arg His Pro Val Ser Val Gly Tyr Ser Asn Ile Tyr Ser		
	35	40
Phe Cys Arg Asp Phe Val Ser Thr Pro Arg Phe Leu Gly Ala Phe Pro		
	50	55
Trp Leu Glu Leu Ala Gly Thr Ile Ala Pro Leu Leu Ala Ala Tyr Asn		
65	70	75
Ala Asn Ala Ser Ala Leu Ser Leu His Ile Glu Ser Pro Gln Ala Tyr		
	85	90
Trp Asp Ala Ala Glu Asp Arg Ile Arg Glu Ile Cys Lys Arg Lys Gly		
	100	105
Val Pro Tyr Ser Ala Arg Met Leu Glu Glu Phe Lys Asp Glu Ala Met		
	115	120
Glu Lys Phe Ala Ser Gly Val Thr Gly Arg Glu Asn Val Gly Lys Tyr		
	130	135
Met His Thr Thr Arg Phe Trp Asp Ala Asp Ala Asn Asp Phe Gln Gly		
145	150	155
Trp Thr Ile Thr Pro Ile Asp Lys Lys Ile Arg Asp Tyr Ile Glu Ser		
	165	170
Gln Ile Lys Ile Ala Asn Lys Ala Asp Ala Ala Ala Thr Ser Gly Phe		

			180					185					190				
Gly	Leu	Asp	Pro	Val	Leu	Ser	Asn	Leu	Ile	Met	Asp	Asn	Lys	Leu	Ser		
		195					200					205					
Ser	Gly	Ser	Glu	Lys	Leu	Tyr	Ser	Ile	Lys	Val	Tyr	Asn	Ala	Ser	Glu		
	210					215					220						
Thr	Ala	Ile	Pro	Asp	Met	Ile	Leu	Cys	Lys	Pro	Leu	Met	His	Tyr	Ile		
225					230					235					240		
Arg	Ala	Asn	Tyr	Pro	Gly	Ser	Arg	Thr	Gln	Val	Gly	Leu	Tyr	Arg	Ser		
				245					250					255			
Val	Val	Glu	Ser	Glu	Gln	Ser	Val	Ser	Pro	Ala	Asn	Arg	Met	Lys	Glu		
			260					265					270				
Asn	Ile																

<210> 6280
 <211> 158
 <212> PRT
 <213> B.fragilis

Ile	Arg	Asn	Ala	Met	Asn	Glu	Asp	Leu	Ile	Lys	Gln	Glu	Phe	Val	Arg		
1			5						10					15			
Glu	Asn	Ile	Glu	Arg	Asp	Ile	Arg	Ala	Ile	Phe	Glu	Ala	Gln	Tyr	Leu		
			20					25					30				
Ile	Ala	Thr	Glu	Arg	Val	Tyr	Thr	Ser	Ala	Ile	Tyr	Pro	Thr	Gln	Val		
		35					40					45					
Gly	Gln	Gly	Arg	Ser	Leu	Val	Arg	Glu	Gln	Gly	Tyr	Gly	Arg	Leu	Val		
	50					55					60						
Arg	Gly	Thr	Thr	Gly	Arg	Leu	Leu	Ser	Ala	Leu	His	Asn	Pro	Val	Tyr		
65					70					75					80		
Ser	Val	Gly	Phe	Ser	Gly	Arg	Gly	Val	Val	Ala	Thr	Ser	Asn	Ile	Pro		
				85					90					95			
Leu	Tyr	Ile	Arg	Phe	Leu	Asp	Met	Lys	Lys	His	Gly	Asn	Tyr	Gly	Ile		
			100					105					110				
Tyr	Asn	Arg	Gln	Val	Trp	Gly	Ile	Leu	Trp	Asn	Asn	Ser	Leu	Gln	Thr		
		115					120						125				
Ile	Lys	Tyr	Gly	Tyr	Gly	Lys	Glu	Val	Arg	Asp	Arg	Ile	Tyr	Ala	Gly		
	130					135					140						
Leu	Gln	Glu	Ala	Phe	Gln	Arg	Met	Glu	Ile	Arg	Thr	Asp	Ser				
145					150					155							

<210> 6281
 <211> 151
 <212> PRT
 <213> B.fragilis

Asn	Cys	Ser	Ala	Met	Val	Asp	Leu	Gln	Gln	Tyr	Glu	Glu	Tyr	Trp	Ser		
1				5					10					15			
Gly	Ile	Thr	Glu	Arg	Ile	Pro	Gln	Ile	Lys	Lys	Val	Val	Pro	Val	Thr		
		20						25					30				
Phe	Asp	Pro	Asp	Met	Gly	Ala	Leu	Val	Gln	Gly	Leu	Lys	Ala	Asp	Glu		
		35					40					45					
Leu	Pro	Ala	Leu	Leu	Leu	Ile	Pro	Ser	Ala	Lys	Gly	Lys	Ser	Pro			
	50					55				60							
Asp	Val	Asp	Asn	Leu	Leu	Glu	Leu	Asn	Leu	Cys	Val	Ala	Phe	Leu	Met		
65					70					75					80		
Asp	Lys	Thr	Asp	Pro	Gln	Arg	Lys	Gly	Thr	Tyr	Gln	Val	Leu	Lys	Glu		
				85					90					95			

Leu Gln Pro Val Met Glu Lys Met Lys Ala Gln Met Ile Asp Asp Lys
 100 105 110
 Ala Ala Gly Cys His Leu Leu Ser Arg Leu Asp Leu Ser Ser Leu Ser
 115 120 125
 Thr Ile Pro Glu Ala Gly Phe Tyr Ser Val Phe Ala Gly Trp Ser Leu
 130 135 140
 Gly Phe Glu Phe Glu Thr Pro
 145 150

<210> 6282

<211> 133

<212> PRT

<213> B.fragilis

<400> 6282

Glu Ala Met Lys Tyr Phe Thr Ile Lys Glu Leu Ser His Ser Asp Thr
 1 5 10 15
 Ala Val Ala Arg Gly Ile Asp Asn Thr Pro Thr Gly Glu Val Val His
 20 25 30
 Asn Leu Thr Glu Leu Val Glu Asn Val Leu Asp Pro Leu Arg Glu Lys
 35 40 45
 Tyr Gly Lys Pro Ile Arg Val Ser Ser Gly Tyr Arg Ser Ala Val Leu
 50 55 60
 Asn Arg Ser Val Asn Gly Ala Thr Ser Ser Gln His Leu Leu Gly Gln
 65 70 75 80
 Ala Ala Asp Ile Thr Val Gly Ser Lys Glu Gly Asn Arg Arg Leu Phe
 85 90 95
 Glu Ile Ile Arg Lys Glu Leu Pro Phe Asp Gln Leu Ile Asp Glu Lys
 100 105 110
 Asp Phe Ser Trp Val His Val Ser Phe Arg Thr Gly Lys Asn Arg Lys
 115 120 125
 Gln Val Leu Lys Leu
 130

<210> 6283

<211> 948

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (908)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6283

Glu Ser Val Asn Asp Leu Glu Leu Met Gln Ala Ala Val Arg Ala Lys
 1 5 10 15
 Asp Phe Arg Ile Pro Leu Glu Asp Leu Gly Lys Tyr Leu Gln Phe Ala
 20 25 30
 Arg Leu Lys Ala Gln Gln Thr Gly Gln Ser Val Asp Tyr Leu Thr Asp
 35 40 45
 Ser Ile Ile Thr Gly Leu Gly Arg Lys Ser Leu Leu Ile Leu Asp Asn
 50 55 60
 Leu Gly Leu Ser Ala Ala Glu Val Asn Glu Glu Met Ala Lys Thr Gly
 65 70 75 80
 Asp Leu Met Ala Ala Val Ala Ala Ile Val Asp Arg Gln Leu Ala Gln
 85 90 95
 Ala Gly Glu Asn Tyr Val Ser Ala Ala Asp Lys Ala Ala Gln Lys Ala
 100 105 110

Ala Glu Leu Gln Asn Arg Gln Met Glu Ile Gly Arg Leu Leu Leu Pro
 115 120 125
 Leu Gln Glu Lys Trp Ser Gly Leu Phe Gln Ser Leu Lys Leu Gly Phe
 130 135 140
 Ser Asp Val Ala Leu Arg Val Leu Glu His Lys Lys Ser Ile Ile Thr
 145 150 155 160
 Leu Ile Ser Val Val Thr Gly Phe Ile Leu Val Tyr Lys Thr Val Ile
 165 170 175
 Leu Leu Gln Lys Thr Trp Asn Gly Leu Leu Met Leu Gly Lys Ala Val
 180 185 190
 Gly Leu Ala Tyr Ala Ser Val Val Ala Met Gln Arg Gly Asn Ile Leu
 195 200 205
 Arg Ser Ala Ala Ala Met Lys Met Tyr Asn Ala Ser Val Ala Ser Asn
 210 215 220
 Asn Ile Leu Val Lys Ala Cys Thr Ala Ser Thr Tyr Leu Phe Ala Ala
 225 230 235 240
 Ala Lys Ala Val Leu Thr Gly Asn Ile Asn Lys Ala Arg Ile Ala Met
 245 250 255
 Gln Ala Phe Tyr Ala Ile Thr Lys Ile Ser Pro Leu Ala Ile Val Ala
 260 265 270
 Thr Val Val Ala Ala Leu Thr Tyr Lys Leu Val Ser Tyr Arg Arg Glu
 275 280 285
 Leu Thr Ala Thr Glu Lys Ala Glu Arg Ser Leu His Arg Val Arg Ala
 290 295 300
 Gln Ala Ala Asp Thr Val Ala Thr Glu Thr Arg Glu Leu Asn Thr Leu
 305 310 315 320
 Leu Gly Ile Ala Arg Asn Glu Lys Ile Ser Lys Glu Gln Arg Met Glu
 325 330 335
 Ala Ile Lys Arg Leu Asn Ala Leu Ser Glu Glu Tyr Leu Gly Gly Leu
 340 345 350
 Arg Leu Glu Thr Ile Asn Thr Arg Glu Ala Thr Ala Ala Val Lys Asp
 355 360 365
 Tyr Thr Asp Asn Leu Leu Ser Met Ala Arg Ile Arg Ser Ala Asn Ser
 370 375 380
 Arg Leu Glu Glu Ile Gln Lys Glu Lys Arg Ala Leu Glu Glu Gln Arg
 385 390 395 400
 Lys Asp Ile His Ala Asn Arg Asn Leu Trp Asp Ser Phe Lys Leu Gly
 405 410 415
 Leu Ala Lys Gly Phe Asn Ser Leu Ser Val Ala Val Lys Gly Tyr Ser
 420 425 430
 Asp Ala Trp Ser Glu Gly Val Ile His Asp Tyr Phe Ala Arg Glu Phe
 435 440 445
 Asp Gln Ile Gln Ala Leu Asn Arg Glu Glu Lys Lys Leu Thr Gln Glu
 450 455 460
 Ile Thr Ala Ser Gln Gln Asp Ile Ile Lys Val Asp Thr Gln Ser Glu
 465 470 475 480
 Ala Lys Thr Lys Asp Leu Ile Gln Ala Lys Lys Glu Glu Ile Ala Gln
 485 490 495
 Ala Glu Arg Glu Val Ala Ser Thr Pro Ala Leu Leu Ala Ala Lys Asn
 500 505 510
 Arg Lys Leu Gln Gln Leu Asn Glu Leu Lys Ala Leu Gln Gln Leu
 515 520 525
 Gly Thr Ile Arg Glu Thr Pro Asp Gly Phe Ala Ser Gln Thr Asp Lys
 530 535 540
 Val Leu Ser Ala Leu Asn Glu Arg His Glu Lys Glu Leu Leu Lys Ile
 545 550 555 560
 Arg Glu Asn Lys Glu Arg Gln Gln Gln Thr Gln Ala Gln Tyr Asp Lys
 565 570 575
 Ala Val Leu Ala Glu Asp Ile Arg Phe His Thr Gln Arg Leu Val Ile

580 585 590
 Leu Glu Gly Leu Glu Lys Lys Thr Ala Arg Thr Lys Leu Arg Gln Leu
 595 600 605
 Ala Asp Ile Arg Ala Lys Met Thr Glu Ser Ser Ala Lys Ile Leu Glu
 610 615 620
 Leu Gln Arg Lys Leu Asp Glu Asn Glu Val Ala Leu Leu Gln Glu Gln
 625 630 635 640
 Arg Asp Lys Lys Leu Ala Ile Gln Glu Asp Thr Tyr Lys Ala Thr Arg
 645 650 655
 Ala Gln Ile Glu Leu Asn Tyr Ala Asn Leu His Ile Thr Gln Gln Gln
 660 665 670
 Arg Asp Met Leu Leu Leu Ser Leu Glu Glu Ser Asn Ser Arg Glu Arg
 675 680 685
 Leu Gly Ile Leu Lys Glu Tyr Arg Lys Asp Val Glu Ala Leu Glu Leu
 690 695 700
 Gln Thr Gly Asp Val Lys Ile Gln Ala Val Lys Leu Ser Gly Gln Lys
 705 710 715 720
 Val Leu Glu Ala Glu Leu Ala Asn Ala Lys Asp Arg Ala Ala Gln Gln
 725 730 735
 Lys Ala Ile Glu Thr Met Leu Ser Ser Phe Lys Lys Glu Phe Asn Leu
 740 745 750
 Phe Asn Leu Pro Asp Glu Thr Asp Leu Gln Leu Lys Val Leu Glu Ala
 755 760 765
 Ser Tyr Arg Ala Arg Leu Glu Ile Arg Asn Ala Leu Lys Asn Glu
 770 775 780
 Leu Val Thr Lys Asp Gln Ala Ala Arg Gln Glu Lys Glu Leu Glu Glu
 785 790 795 800
 Ala Tyr Ser Thr Ala Lys Leu Asn Ile Thr Arg Gly Ala Glu Glu Arg
 805 810 815
 Arg Asn Gly Ile Leu Glu Lys Tyr Gly Leu Leu Gly Phe Gln Gln Arg
 820 825 830
 Tyr Ala Met Gln Met Ala Ala Leu Lys Arg Glu Lys Glu Gln Gly Leu
 835 840 845
 Ile Gly Ala Glu Ala Tyr Ala Lys Ala Glu Lys Met Leu Lys Ile Gln
 850 855 860
 Phe Trp Lys Glu Ala Phe Asp Tyr Tyr Ser Asn Leu Phe Ser Gly Ala
 865 870 875 880
 Val Ser Ala Leu Gln Asn Ala Glu Ile Ala Asn Met Glu Ala Lys Tyr
 885 890 895
 Asp Ala Glu Ile Ala Ala Ala Gln Gly Asn Ala Xaa Glu Val Glu Arg
 900 905 910
 Leu Lys Thr Glu Lys Ala Gln Lys Lys Leu Glu Ile Glu Lys Lys Tyr
 915 920 925
 Ala Asp Val Gln Phe Ala Val Lys Ala Thr Arg Ser Leu Pro Asp Thr
 930 935 940
 Ala Trp Pro Ser
 945

<210> 6284
 <211> 316
 <212> PRT
 <213> B.fragilis

<400> 6284
 Tyr Thr Asn Met Lys Leu Ile Phe Asp Lys Asp Ser Asn Gly Thr Gln
 1 5 10 15
 Glu Leu Val Asp Ala Leu Gly Leu Ile Asp Val Arg Thr Asp Phe Ser
 20 25 30
 Lys Trp Lys Pro Tyr Ile Pro Leu Ser Ile Arg Arg Leu Thr Ala Ile

35 40 45
 Ile Gly Gln Glu Val Tyr Asp Lys Val Leu Asp Phe Tyr Gln Ser Ala
 50 55 60
 Ser Val Asp Pro Asp Gly Lys Leu Thr Arg Leu Leu Gly Met Val Gln
 65 70 75 80
 Gln Ser Val Ala Leu Phe Thr Trp Leu Lys Ile Ile Pro Thr Leu Asp
 85 90 95
 Ala Gln His Gly Asn Thr Gly Arg Gln Lys Arg Leu Gly Glu His Glu
 100 105 110
 Lys Gly Leu Thr Ala Leu Gln Glu Tyr Lys Asp Glu Ala Asn Ile Leu
 115 120 125
 Ser Gln Ala Tyr Glu Ser Val Asp Ala Leu Ile Ala Tyr Leu Glu Gln
 130 135 140
 Glu Lys Phe Asp Phe Trp Ile Gln Ser Pro Lys Arg Lys Ala Val Ser
 145 150 155 160
 Glu Leu Leu Leu Asn Ser Lys Glu Ala Phe Asp Phe Tyr Tyr Val Thr
 165 170 175
 Gly Ser His Arg Leu Phe Leu Thr Leu Ala Pro Ile Ile Arg Glu Val
 180 185 190
 Gln Gln Arg His Ile Ile Pro Ile Ile Thr Tyr Gly Arg Tyr Glu Lys
 195 200 205
 Leu Val Ala Gly Gln Gln Val Ala Glu Gly Phe Arg Asp Ala Val Cys
 210 215 220
 Arg Pro Leu Ala Leu Leu Ser Met Ser Lys Ala Val Glu Arg Leu Pro
 225 230 235 240
 Val Glu Val Leu Pro Asp Gly Val Val Gln Val Gln Leu Ala Gly Ser
 245 250 255
 Val Arg Glu Lys Leu Arg Ala Glu Ala Glu Ala Arg Lys Thr Val Ala
 260 265 270
 Lys Ser Leu Glu Gln Asp Gly Met Arg Asp Leu Ala Ala Leu Glu Asp
 275 280 285
 Leu Val Ala Ala Leu Asp Ala Ala Pro Asp Glu Pro Asp Leu Tyr Val
 290 295 300
 Pro Ser Ile Thr Leu Gln Ser Lys Gly Ile Thr Phe
 305 310 315

<210> 6285

<211> 215

<212> PRT

<213> B.fragilis

<400> 6285

Asn Thr Asp Met Ala Arg Arg Ser Ala Thr Val Phe Met Pro Asp Tyr
 1 5 10 15
 Arg Lys Leu Ser Lys Glu Trp Lys Tyr Val Arg Ile Pro Lys Asp Thr
 20 25 30
 Leu Ser Phe Cys Pro Gly Asp Gly Pro Pro Ile Phe Val Leu Lys Asn
 35 40 45
 Asn Val Met Gly Lys Leu Gln Pro Asp Tyr Ile Thr Trp Thr Leu Leu
 50 55 60
 Val Asn Ala Asp Gly Leu Gln Lys Glu Met Leu Lys Val Arg Asn Asn
 65 70 75 80
 Thr Lys Glu Leu Lys Ala Glu Asn Val Arg Leu Lys Ser Ser Met Glu
 85 90 95
 Asn Leu Ala Met Gln Gly Lys Leu Gln Ser Lys Glu Tyr Lys Glu Leu
 100 105 110
 Asn Ala Gln Leu Lys Ala Asn Asn Arg Thr Ile Ser Glu Asn Gly Glu
 115 120 125
 Lys Leu Arg Leu Leu Glu Ser Arg Leu Asn Asn Ala Asp Lys Ser Tyr

130	135	140
Ala Gln Leu Ser Lys Gln	Ala Arg Gln Leu Arg Arg	Glu Leu Asp Asn
145	150	155
Thr Val Lys Ser Leu Gln	Pro Gln Glu Tyr Ala Arg	Leu Glu Ala Glu
	165	170
Leu Ala Lys Thr Lys Glu	Ala Met Glu Gln Leu Arg	Pro Lys Thr Arg
	180	185
Gly Gly Glu Arg Val Ile	Phe Gln Pro Tyr Gln Asp	Glu Ile Arg Gly
	195	200
Ser Pro Val Phe Ser Pro	Val	
210	215	

<210> 6286

<211> 264

<212> PRT

<213> B.fragilis

<400> 6286

Ile Met Glu Ile Arg Arg	Thr Gly Asn Thr Gly Phe Ile Asp Thr Gly
1	5
Glu Gly Gln Leu Ile Ser	Phe Ala Met Gly Lys Gly Trp Ser Pro Ser
	20
Ser Ile Ser Phe Ser Arg	Pro Glu Ser Trp Gln Thr Arg Lys Ile Arg
	35
Val Ala Gly Val Asn Ile	Val Pro Met Gly Ala Asn Asp Leu Pro
	50
Gly Asp Val Gln Arg Leu	Leu Asp Asn Phe Tyr Gly Gly Glu Gly Ile
65	70
Met Gly Lys Ile Gln Gly	Leu Gln Trp Gly Glu Gly Pro Arg Phe Phe
	85
Glu Glu Ala Ile Asp Ser	Glu Asn Asn Arg Phe Tyr Arg Lys Trp Ile
	100
Leu Asp Asp Val Ile Gln	Ala Asp Leu Glu Ser Trp Asp Tyr Arg Asp
	115
Tyr Met Leu Arg Cys Leu	Val Asp Leu Val His Met Gln Gly Phe Trp
	130
Val Lys Phe Ile Arg Asn	Arg Gly Pro Arg Ile Gly Glu Asp Gly Arg
145	150
Ile Ile Arg Leu Glu His	Ile Pro Tyr Arg Lys Cys Arg Phe Glu Tyr
	165
Pro Asp Asp Arg His Asp	Leu Pro Gln Asn Val Tyr Val Gly Arg Leu
	180
Gly Pro Ser Pro Ile Pro	Thr Gly Leu Gly Gln Ile Ser Arg Phe Gln
	195
Ser Gly Gly Pro Arg Ser	Gly Ile Arg Tyr Arg Ser Ala Ile Pro Thr
	210
Tyr Thr Pro Phe Ala Gly	Thr Leu Ser Ala Arg Pro Val Ser Trp Gly
225	230
Leu Ser Arg Gly Trp Asn	Trp Arg Ala Pro Ser Pro Pro Cys Trp Gln
	245
Pro Ile Met Pro Thr Arg	Arg His
	260

<210> 6287

<211> 285

<212> PRT

<213> B.fragilis

<400> 6287

Thr Gly Ser Val Cys Thr Leu Asp His Pro Ser Ile Lys Arg His Asn
 1 5 10 15
 Ile Leu Thr Met Lys Glu Ile Thr Tyr Asn Asn Gln Lys Lys Glu Ile
 20 25 30
 Pro Asp Ser Leu Glu Glu Leu Ser Pro Lys Glu Tyr Tyr Arg Tyr Leu
 35 40 45
 Glu Leu Val Leu Met Met Asn Ala Gly Glu Ile Ser Pro Phe Gln Met
 50 55 60
 Arg Cys Lys Leu Leu Ser Cys Leu Leu Gly Met Lys His Ser Leu Leu
 65 70 75 80
 Leu Cys Leu Gly Glu Ile Gln Glu Glu Leu Leu Ala Gln Leu Pro Ala
 85 90 95
 Leu Asp Gly Phe Phe Asp Ile Thr Ser Gln Glu Gly Met Met Val Tyr
 100 105 110
 Asp Ala Arg Leu Lys Thr Gly Arg Asn Leu Leu Pro Ala Tyr Lys Glu
 115 120 125
 Trp Lys Gly Pro Gly Asp Met Leu Ser Gly Ile Thr Phe Gly Gln Phe
 130 135 140
 Ile Glu Cys Met Gly Val Met Ala Glu Met Glu Arg Ala Arg Glu Gln
 145 150 155 160
 Gly Asn Glu Glu Asp Ile Gly Glu Leu Ile Ser Ser Ile Gly Arg Leu
 165 170 175
 Leu Tyr Lys Lys Gln Gly Pro Gln Glu Thr Gly Thr Pro Pro Phe Pro
 180 185 190
 Val Cys Phe His Ala Tyr Ile Phe Phe Leu Ala Val Trp Glu Leu Ile
 195 200 205
 Tyr Ser Val Pro Ile Ser Thr Asn Gly Lys Asp Ile Asp Phe Ser Ile
 210 215 220
 Leu Phe Glu Lys Ser Gly Arg Gly Asn Ala Gly Asp Asn Thr Gly Trp
 225 230 235 240
 Val Gly Ile Ser Tyr Asp Val Ala Ala Ser Gly Val Phe Gly Asp Phe
 245 250 255
 Arg Gln Val Asn Asp Thr Pro Phe Trp Asp Val Met, Leu Tyr Ile Tyr
 260 265 270
 Lys Cys Arg Phe Glu Met Leu His Asn Asn Lys Lys Gln
 275 280 285

<210> 6288

<211> 168

<212> PRT

<213> B.fragilis

<400> 6288

Lys Gly Glu Ser Lys Thr Leu Lys Ile Gly Lys Lys Thr Met Gly Gln
 1 5 10 15
 Leu Asp Lys Thr Asp Val Glu Ile Leu Gln Val Leu Gln Lys Asp Ala
 20 25 30
 Lys Val Asn Thr Lys Glu Leu Ser Glu Lys Leu His Ile Ser Lys Thr
 35 40 45
 Pro Ile Tyr Glu Arg Ile Lys Arg Leu Glu Asn Asp Gly Tyr Ile Lys
 50 55 60
 Gly Tyr Val Ala Leu Val Asp Asn Lys Lys Val Gly Leu Pro Leu Ile
 65 70 75 80
 Val Phe Cys Asn Val Ser Leu Ala Val His Asp Asp Glu His Ile Lys
 85 90 95
 Arg Phe Gln Glu Glu Ile Lys Glu Ile Asp Glu Ile Met Glu Cys Tyr
 100 105 110
 Ser Thr Gly Gly Ile Tyr Asp Phe Phe Ile Lys Val Val Leu Lys Asp
 115 120 125

Leu Asp Ala Tyr Asn Arg Phe Val Phe Glu Lys Leu Thr Lys Val His
 130 135 140
 Gly Ile Val Lys Met Gln Ser Ser Phe Val Leu Ser Glu Ile Lys His
 145 150 155 160
 Thr Thr Val Leu Asn Ile Asp Arg
 165

<210> 6289
 <211> 215
 <212> PRT
 <213> B.fragilis

<400> 6289
 Gln Leu Leu Leu Ala Arg Gln Glu Val Glu Lys Ser Thr Val Met Lys
 1 5 10 15
 Leu Cys Ala Arg Phe Tyr Asp Pro Thr Lys Gly Arg Ile Leu Phe Gly
 20 25 30
 Gly Val Pro Val Arg Glu Ile Glu Pro Glu Lys Leu Met Ser Arg Ile
 35 40 45
 Ser Met Val Phe Gln Asp Val Tyr Leu Phe Gln Asp Ser Ile Arg Asn
 50 55 60
 Asn Ile Arg Phe Gly Lys Ser Asp Ala Thr Asp Glu Glu Ile Val Ala
 65 70 75 80
 Ala Ala Lys Lys Ala Cys Cys His Asp Phe Ile Met His Leu Pro His
 85 90 95
 Gly Tyr Asp Thr Met Val Gly Glu Gly Gly Cys Thr Leu Ser Gly Gly
 100 105 110
 Glu Lys Gln Arg Leu Ser Ile Ala Arg Ala Met Leu Lys Asp Ala Gln
 115 120 125
 Ile Val Leu Leu Asp Glu Ala Thr Ala Ser Leu Asp Pro Glu Asn Glu
 130 135 140
 Val Glu Ile Gln Lys Ala Ile Asp Thr Leu Ile Lys Gly Arg Thr Val
 145 150 155 160
 Ile Val Ile Ala His Arg Leu Lys Thr Ile Met Gly Ala Asp His Ile
 165 170 175
 Val Val Leu Ser Asp Gly Lys Val Glu Glu Gln Gly Thr His Ser Glu
 180 185 190
 Leu Met Cys Arg Asp Gly Leu Tyr Arg Lys Leu Trp Asn Ile Gln Glu
 195 200 205
 Ser Thr Leu Gly Trp Thr Leu
 210 215

<210> 6290
 <211> 140
 <212> PRT
 <213> B.fragilis

<400> 6290
 Ile Ile Tyr Pro Lys Gly Ile Asn Ile Met Ile Gln Thr Ile Gln Val
 1 5 10 15
 Gln Gly Thr Glu Lys Arg Leu Tyr Gln Leu Ile Ala Pro Leu Val Met
 20 25 30
 Asn Pro Asp Val Leu Ser Ala Asn Asn Tyr Pro Phe Lys Thr Thr
 35 40 45
 Glu Gln Tyr Val Trp Phe Ile Ala Ile Asp Lys Lys Ser Val Val Gly
 50 55 60
 Phe Met Pro Val Glu His Arg Arg Ser Gly Cys Val Ile Asn Asn Tyr
 65 70 75 80
 Tyr Val Ser Gly Asp Asn Arg Glu Thr Leu Ser Leu Leu Ile Ser Ser

				85				90					95				
Val	Leu	Glu	Ala	Ile	Gly	Lys	Glu	Val	Arg	Leu	Phe	Ala	Val	Val	Met		
			100					105					110				
Val	Asn	His	Gln	Ala	Val	Phe	Glu	Glu	His	Gly	Phe	Ile	Met	Glu	Lys		
		115					120					125					
Ala	Trp	Lys	Arg	Tyr	Val	Lys	Met	Gln	Lys	Asp	Glu						
	130					135					140						

<210> 6291

<211> 608

<212> PRT

<213> B.fragilis

<400> 6291

Ile	Asn	Arg	Leu	Ile	Met	Val	Asn	Lys	Lys	Lys	Glu	Gly	Leu	Ser	Arg		
1				5					10					15			
Leu	Phe	Glu	Ile	Ala	Gly	Gln	Lys	Lys	Ser	Leu	Leu	Leu	Leu	Ala	Gly		
			20				25						30				
Leu	Leu	Ser	Ala	Gly	Ser	Ala	Val	Cys	Met	Leu	Ile	Pro	Tyr	Trp	Ala		
		35				40						45					
Ile	Tyr	Arg	Ile	Leu	Tyr	Glu	Leu	Leu	Asn	His	Ser	Arg	Glu	Leu	Ser		
	50				55					60							
Ser	Ile	Asp	Glu	Thr	Asn	Met	Ile	Arg	Trp	Gly	Trp	Ile	Ala	Phe	Gly		
65				70					75					80			
Gly	Leu	Ile	Gly	Gly	Leu	Leu	Leu	Leu	Tyr	Ala	Ser	Leu	Met	Ser	Ser		
			85					90					95				
His	Val	Ala	Ala	Tyr	Arg	Ile	Leu	Tyr	Gly	Leu	Arg	Ile	Arg	Leu	Thr		
		100					105					110					
Glu	His	Ile	Gly	Arg	Leu	Pro	Leu	Gly	Tyr	Leu	Asn	Gly	Thr	Ser	Thr		
		115				120						125					
Gly	Ala	Ile	Lys	Lys	Thr	Met	Glu	Gln	Asn	Val	Glu	Lys	Ile	Glu	Asn		
	130				135					140							
Phe	Ile	Ala	His	Thr	Ile	Pro	Asp	Leu	Val	Asn	Val	Met	Ala	Thr	Val		
145				150					155					160			
Val	Val	Met	Phe	Leu	Ile	Phe	Phe	Ser	Leu	Asp	Gly	Trp	Leu	Ala	Gly		
			165					170					175				
Val	Cys	Leu	Ala	Val	Ile	Val	Leu	Ser	Ile	Phe	Leu	Gln	Phe	Ser	Asn		
		180				185						190					
Phe	Met	Gly	Lys	Lys	Ala	Arg	Glu	Phe	Thr	Arg	Ile	Tyr	Tyr	Asn	Ala		
	195					200					205						
Gln	Glu	Gln	Met	Ser	Ala	Ser	Ala	Val	Gln	Tyr	Val	Arg	Gly	Met	Pro		
	210				215						220						
Val	Val	Lys	Ile	Phe	Gly	Gln	Ser	Val	Arg	Ser	Phe	Arg	Gln	Phe	Asn		
225				230					235					240			
Ala	Glu	Ile	Glu	Ala	Tyr	Lys	Thr	Tyr	Ala	Leu	Lys	Val	Cys	Asp	Thr		
			245					250					255				
Tyr	Glu	Ser	Gly	Met	Thr	Tyr	Phe	Thr	Val	Leu	Leu	Asn	Ser	Ile	Val		
	260					265						270					
Thr	Phe	Ile	Leu	Pro	Val	Gly	Ile	Leu	Leu	Met	Gln	Asn	Asp	Ser	Arg		
	275				280							285					
Ser	Leu	Thr	Leu	Ala	Ala	Val	Trp	Leu	Phe	Phe	Ile	Ile	Leu	Gly	Pro		
	290				295						300						
Gly	Val	Ala	Ser	Pro	Val	Tyr	Lys	Leu	Met	Tyr	Leu	Gly	Ser	Ser	Thr		
305				310					315					320			
Arg	Glu	Ile	Asn	Glu	Gly	Val	Ser	Arg	Ile	Asp	Arg	Ile	Leu	Glu	Asn		
			325					330					335				
Gln	Pro	Val	Ser	Glu	Pro	Ala	Cys	Pro	Lys	Ile	Pro	Ala	Thr	Tyr	Asp		
		340				345						350					
Ile	Glu	Phe	Arg	His	Val	Ser	Phe	Ser	Tyr	Glu	Asn	Lys	Glu	Gln	Ala		

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355	360	365
Thr Arg Thr Glu Ala Leu His Asp Leu Cys Phe Thr Ala Pro Gln Gly		
370	375	380
Lys Ile Thr Ala Phe Val Gly Pro Ser Gly Ser Gly Lys Ser Thr Val		
385	390	395
Ala Asn Leu Ile Pro Arg Phe Trp Asp Val Glu Gln Gly Glu Ile Leu		
	405	410
Ile Gly Asn Val Asn Val Lys Asp Ile Ala Thr Glu Gln Leu Met Asp		
	420	425
Leu Val Ser Phe Val Phe Gln Asp Thr Phe Leu Phe Tyr Asp Thr Leu		
	435	440
Tyr Glu Asn Ile Ala Val Gly Ser Ser Lys Ala Thr Arg Asp Thr Val		
	450	455
Ile Ala Ala Ala Arg Ala Ala Gln Cys His Glu Phe Ile Glu Lys Leu		
465	470	475
Pro Asn Gly Tyr Glu Thr Arg Ile Gly Asp Lys Gly Val Phe Leu Ser		
	485	490
Gly Gly Glu Ala Gln Arg Val Cys Val Ala Arg Ala Ile Leu Lys Asn		
	500	505
Ala Pro Ile Leu Val Leu Asp Glu Ala Thr Ala Phe Ala Asp Pro Glu		
	515	520
Asn Glu Tyr Lys Met Gln Gln Ala Leu Lys Ser Leu Ile Lys Asp Lys		
	530	535
Thr Val Ile Ile Ile Ala His Arg Leu Ser Ser Ile Val Ser Ser Asp		
545	550	555
Arg Ile Ile Val Leu Lys Asp Gly Arg Ala Val Gln Cys Gly Arg His		
	565	570
Glu Glu Leu Ser Ser Gln Glu Gly Val Tyr Lys Lys Met Trp Asn Ala		
	580	585
Tyr Thr Ser Ala Phe Arg Trp Gln Leu Asn Val Lys Gln Glu Lys Glu		
	595	600

<210> 6292

<211> 185

<212> PRT

<213> B.fragilis

<400> 6292

Lys His Ile Ala Met Ser Ile Lys Lys Ser Pro Val Tyr Asn Val Ile		
1	5	10
Ala Val Pro Val Glu Lys Val Gln Ala Asn Asp Tyr Asn Pro Asn Val		
	20	25
Val Ala Pro Pro Glu Met Arg Leu Leu Glu Leu Ser Ile Trp Glu Asp		
	35	40
Gly Phe Thr Met Pro Cys Val Cys Tyr Tyr Asp Lys Glu Lys Asp Val		
	50	55
Tyr Ile Leu Val Asp Gly Phe His Arg Tyr Ser Val Leu Lys Thr Ser		
65	70	75
Lys Arg Ile Phe Gln Arg Glu Asn Gly Met Leu Pro Ile Val Val Ile		
	85	90
Glu Lys Asp Leu Ser Asn Arg Met Ser Ser Thr Ile Arg His Asn Arg		
	100	105
Ala Arg Gly Thr His Asn Ile Glu Leu Met Cys His Ile Val Ala Glu		
	115	120
Leu Asp Lys Ala Gly Met Ser Asp Gln Trp Ile Met Lys Asn Ile Gly		
	130	135
Met Asp Arg Asp Glu Leu Leu Arg Leu Lys Gln Ile Ser Gly Leu Ala		
145	150	155
Asp Leu Phe Ala Asn Arg Asp Phe Ser Val Pro Glu Asp Asp Gln Pro		

165
Gly Asn Val Asp Lys Lys Pro Thr Arg
180 185

170

175

<210> 6293
<211> 337
<212> PRT
<213> B.fragilis

<400> 6293

Arg Met Ser Ala Ile Arg Asn Ile Thr Ile Gly Arg Thr Glu Arg Leu
1 5 10 15
Tyr Lys Pro Val Gly Tyr Thr Met Leu Ala Asn Leu Val Asn Ile Val
20 25 30
Pro Phe Cys Leu Ser Ile Glu Ala Ile Arg Ile Ile Phe Arg Ala Phe
35 40 45
Asn Gly Gly Gly Gln Ser Leu Asp Thr Thr Arg Leu Trp Cys Ile Phe
50 55 60
Gly Cys Met Thr Gly Tyr Ile Ala Val Met Val Leu Ala Glu Arg Ala
65 70 75 80
Ala Tyr Arg Ala Asn Phe Arg Gly Ala Tyr Glu Met Ser Ala Ser Gly
85 90 95
Arg Ile Ser Leu Ala Glu His Leu Arg Lys Leu Ser Leu Gly Phe Leu
100 105 110
Gly Lys Arg Asp Pro Gly Asp Leu Ser Ser Met Leu Ile Thr Asp Phe
115 120 125
Thr Met Ala Glu Thr Gly Ile Ser His Tyr Leu Pro Gln Leu Met Gly
130 135 140
Ala Leu Val Met Pro Val Leu Ala Phe Val Ser Leu Leu Trp Ile Asp
145 150 155 160
Trp Arg Met Ala Val Ala Met Phe Val Ala Leu Pro Phe Ala Met Gly
165 170 175
Ile Leu Trp Leu Ser Thr Ser Val Gln Glu Arg Leu Ser Gly Arg Gln
180 185 190
Ile Lys Ala Lys Val Asn Ala Gly Asn Arg Leu Glu Glu Tyr Leu Gln
195 200 205
Gly Ile Arg Val Met Lys Ala Tyr Asn Leu Leu Gly Asp Arg Phe Val
210 215 220
Arg Leu Arg Asp Ala Phe Ala Glu Leu Arg Arg Ala Cys Ile Arg Leu
225 230 235 240
Glu Ala Leu Leu Gly Pro Phe Val Leu Leu Ala Ile Thr Leu Val Arg
245 250 255
Ala Gly Leu Thr Leu Met Val Leu Cys Gly Thr Tyr Leu Leu Leu Gly
260 265 270
Gly Gln Leu Ser Ile Leu Thr Phe Val Met Phe Leu Val Val Gly Ser
275 280 285
Arg Val Phe Asp Pro Leu Thr Ser Ala Leu Thr Asn Phe Thr Glu Phe
290 295 300
Arg His Phe Ser Ile Ser Gly Gly Arg Ile Leu Ser Leu Met Asn Glu
305 310 315 320
Pro Glu Met Lys Gly Thr Lys Glu Ala Pro Glu Asp Gly Asn Ile Ile
325 330 335
Phe

<210> 6294
<211> 117
<212> PRT
<213> B.fragilis

<220>

<221> UNSURE

<222> (94), (95)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6294

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Ser Trp Arg Tyr Pro Leu Asp Leu Gly Ala Val Lys Leu Ser Ala Gln
1          5          10          15
Gln Met Ile Val Leu Thr Pro Val Leu Arg Tyr Thr Glu Gly Glu Glu
          20          25          30
Gln Gln Leu Leu Ala Pro Val Val Ile Ala Gly Pro Arg Arg Tyr Arg
          35          40          45
Val Leu Lys Arg Ser Leu Ala Phe Gly Thr Asp Asn Phe Glu Met Phe
          50          55          60
Pro Met Leu Val Glu Asn Arg Lys Ser Gly Thr Pro Gln Thr Val Asn
65          70          75          80
Ile His Phe Gly Leu Pro Tyr His Glu Trp Met Arg Arg Xaa Xaa Leu
          85          90          95
Ile Ile Arg Glu Arg Cys Pro Val Val Pro Ile Val Leu Ser Val Arg
          100          105          110
Met Thr Ile Pro Leu
          115

```

<210> 6295

<211> 156

<212> PRT

<213> B.fragilis

<400> 6295

```

Ile Pro Leu Gln Val Gln Lys Tyr Ile Glu Tyr Met Glu Thr Lys Ile
1          5          10          15
Leu Ser Asn Ala Thr His Lys Cys Val Leu Val Ile Asp Asn Ala Gln
          20          25          30
Pro Thr Gly Ile Val Ala Asn Ile Ala Ser Val Leu Ser Met Thr Leu
          35          40          45
Gly Cys Arg Val Ser Asn Ile Val Ser His Asp Val Tyr Asp Lys Gln
          50          55          60
Gly Glu Arg His Leu Gly Ile Thr Gln Leu Pro Ile Pro Ile Leu Gly
65          70          75          80
Ala Ser Gln Glu Lys Ile Lys Glu Leu Arg Asn Tyr Phe His Ser Leu
          85          90          95
Glu Ile Glu Asp Leu Val Leu Val Asp Phe Ser Thr Ile Ala Gln Gln
          100          105          110
Ser Arg Thr Tyr Asp Glu Tyr Glu Arg Glu Met Tyr Ser Ala Asn Glu
          115          120          125
Asp Asp Leu His Tyr Val Gly Ile Gly Ile Cys Ala Glu Lys Lys Ala
          130          135          140
Ile Asn Lys Ala Thr Gly Ser Leu Ser Leu Ile Arg
145          150          155

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<210> 6296

<211> 60

<212> PRT

<213> B.fragilis

<400> 6296

```

Leu Ile Arg Gln Leu Tyr Leu Pro Leu Leu Ala Asn Ile Arg Ile Ser
1          5          10          15

```

[illegible]

<400> 6297

Met 1	Met	Thr	Lys	Thr 5	Thr	Thr	Val	Pro	Lys 10	Asn	Val	Tyr	Glu	Leu 15	Ala
Gln	Glu	Arg	Leu 20	Arg	Ile	Val	Phe	Asn 25	Glu	Phe	Asp	Asn 30	Val	Tyr	Leu
Ser	Phe	Ser	Gly	Gly	Lys	Asp	Ser 40	Gly	Val	Leu	Leu	Ser 45	Leu	Cys	Ile
Asp	Tyr 50	Ile	Arg	Arg	Asn 55	Asn	Leu	Lys	Ile	Lys	Leu 60	Gly	Val	Phe	His
Met 65	Asp	Tyr	Glu	Ile	Gln 70	Tyr	Lys	Met	Thr	Ile 75	Asp	Tyr	Ile	Ala	Arg 80
Met	Leu	Glu	Asp	Asn 85	Lys	Asp	Ile	Leu	Glu 90	Val	Tyr	Arg	Val	Cys	Val 95
Pro	Phe	Arg	Val 100	Ala	Thr	Cys	Thr	Ser 105	Met	Tyr	Gln	Ser 110	Phe	Trp	Arg
Pro	Trp	Glu 115	Asp	Ser	Lys	Lys	Asp 120	Leu	Trp	Val	Arg	Pro 125	Leu	Pro	Glu
Asn	Ala 130	Met	Thr	Lys	Glu	Asp 135	Phe	Pro	Phe	Tyr	Asn 140	Thr	Gln	Met	Trp
Asp 145	Tyr	Glu	Phe	Gln	Met 150	Arg	Phe	Ala	Ser	Trp 155	Leu	His	Glu	Lys	Lys 160
Asp	Ala	Val	Arg	Thr 165	Cys	Cys	Leu	Ile	Gly 170	Ile	Arg	Thr	Gln	Glu	Ser 175
Phe	Asn	Arg	Trp 180	Arg	Cys	Ile	Tyr	Leu 185	Asn	Arg	Lys	Tyr 190	Gln	Met	Tyr
His	Arg	Tyr 195	Arg	Trp	Thr	Ser	Lys 200	Val	Gly	Asn	Asp 205	Ile	Phe	Asn	Ala
Tyr	Pro 210	Ile	Tyr	Asp	Trp	Lys 215	Thr	Thr	Asp	Val 220	Trp	Thr	Ala	Asn	Gly
Lys 225	Phe	Lys	Trp	Asp	Tyr 230	Asn	Lys	Leu	Tyr	Asp 235	Tyr	Tyr	Tyr	Trp	Ala 240
Gly	Val	Asn	Leu	Glu 245	Arg	Gln	Arg	Val	Ala 250	Ser	Pro	Phe	Ile	Gly	Glu 255
Ala	Gln	Glu	Ser 260	Leu	Ala	Leu	Tyr	Arg 265	Ala	Ile	Asp	Pro 270	Asn	Thr	Trp
Gly	Lys	Met 275	Ile	Gly	Arg	Val	Asn 280	Gly	Val	Asn	Phe 285	Thr	Ser	Met	Tyr
Gly	Gly 290	Thr	His	Ala	Met 295	Gly	Trp	Gln	Ser	Ile 300	Lys	Leu	Pro	Glu	Gly
Tyr 305	Thr	Trp	Arg	Glu	Phe 310	Met	Tyr	Phe	Leu	Leu 315	Ser	Thr	Leu	Pro	Asp 320
Arg	Ala	Arg	Asn 325	Gly	Tyr	Leu	Arg	Lys	Leu 330	Gln	Val	Ser	Val	Gln	Phe 335
Trp	Arg	Asn 340	Lys	Gly	Gly	Cys	Leu	Ser 345	Asp	Glu	Thr	Ile 350	Arg	Arg	Leu
Asn	Glu	Ala 355	Lys	Val	Pro	Ile	Ile 360	Val	Met	Asp	Asn 365	Ser	Asn	Tyr	Lys

Thr Thr Lys Lys Pro Val Arg Met Glu Tyr Gln Asp Asp Ile Asp Ile
 370 375 380
 Pro Glu Phe Arg Glu Ile Pro Thr Tyr Lys Arg Met Cys Ile Cys Ile
 385 390 395 400
 Leu Lys Asn Asp His Ala Cys Lys Tyr Met Gly Phe Ser Pro Thr Lys
 405 410 415
 Glu Glu Met Ser Lys Arg Asn Gln Val Ile Glu Gln Tyr Lys Asn Ile
 420 425 430
 Leu Gln

<210> 6298
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 6298
 Ser Gly Ile Asn Asn Val Ser Ala Thr Met Phe Ser Asn Ser Cys Phe
 1 5 10 15
 Cys Phe Ile Leu Tyr Phe Tyr Asp Val Ser Val Arg Val Ala Leu Lys
 20 25 30
 Asn Glu Arg Tyr Ser Lys Ser Phe Thr Lys Lys Glu Glu Asn Leu Arg
 35 40 45
 Lys Asp Ser Leu Leu Asn Phe Asn Pro Val Asn Gly Asp Leu Tyr Phe
 50 55 60
 Cys Leu Leu Leu Ile Leu Ser Ala Lys Pro Ser Asn Leu Glu Phe
 65 70 75 80
 Gln Thr Ile Tyr Thr His Ala Arg Tyr Thr Pro Phe Pro Cys Tyr Arg
 85 90 95

<210> 6299
 <211> 108
 <212> PRT
 <213> B.fragilis

<400> 6299
 Asn Met Glu Lys Ile Glu Ile Val Leu Arg Arg Glu Gln Asn Asn Arg
 1 5 10 15
 Asn Gly Ile Tyr Leu Asn Tyr Ile Asn Gly Tyr Trp Tyr Thr Tyr Glu
 20 25 30
 Trp Ser Ala Phe Leu Leu Cys Met Leu His Pro Glu Val Glu Val Arg
 35 40 45
 Lys Cys Ile Gly Val Gln Pro Asp Glu Asn Tyr Ala Ile Ala Arg Val
 50 55 60
 Asn Lys Lys Ile Ile Lys Lys Leu Glu Arg Lys Tyr Gln Thr Ser Met
 65 70 75 80
 Met Asp Asp Ser Ile Lys Ile Leu Leu Pro Pro Phe Asn Glu Asp Glu
 85 90 95
 Asn Ile Phe Leu Asn Trp Lys Ala Leu Leu Pro Pro
 100 105

<210> 6300
 <211> 307
 <212> PRT
 <213> B.fragilis

<400> 6300
 Val Gln Arg Lys Lys Asn Gly Lys Met Lys Asp Ser Lys Leu Lys Thr
 1 5 10 15

Ala Gly Met Arg Lys Leu His Trp Gly Lys Ala Val Met Ser Ile Val
 20 25 30
 Val Thr Leu Ala Ala Met Pro Leu Thr His Ser Leu Ala Arg Val Leu
 35 40 45
 Lys Glu Gly Thr Thr Gly Val Glu Gln Phe Tyr Ala Gly Met Gly Met
 50 55 60
 Gly Ala Phe Gly Leu Phe Met Val Ile Ala Gly Val Phe Val Lys Gly
 65 70 75 80
 His Ile Arg Gln Thr Leu Leu Gly Leu Phe Gly Gly Met Phe Tyr Trp
 85 90 95
 Met Gly Ala Val Asp Phe Leu Phe Met Tyr Phe Ala Asn Arg Phe Gly
 100 105 110
 Thr Gln Ala Gln Leu Asp Pro Val Thr Gly Glu Val Val Ser Arg Pro
 115 120 125
 Glu Tyr Leu Leu Leu Pro Ala Thr Phe Gly Phe Trp Val Met Val Met
 130 135 140
 Ile Leu Tyr Leu Phe Cys Thr Arg Asn Gly Cys Asn Phe Leu Asn Trp
 145 150 155 160
 Trp Gln Lys Leu Phe Phe Gly Lys His Lys Lys Glu Ile Val Val Arg
 165 170 175
 Ala Met Thr Arg His Thr Ser Ile Val Ala Phe Met Glu Val Ile Thr
 180 185 190
 Met Leu Trp Thr Cys Tyr Leu Val Leu Met Phe Cys Tyr Asp Glu Arg
 195 200 205
 Phe Phe Gly Asp His His Pro Val Thr Leu Leu Val Gly Met Leu Gly
 210 215 220
 Leu Ile Gly Ser Ile Phe Met Phe Ala Lys Leu Leu Arg His Ala Ser
 225 230 235 240
 Trp Asp Met Ser Leu Arg Phe Gly Phe Ala Thr Val Ile Ile Phe Trp
 245 250 255
 Ile Ala Val Glu Val Phe Asp Arg Ile His Leu Phe Pro Gly Leu Trp
 260 265 270
 Glu Asn Pro Gly Gly His Lys Gln Glu Leu Leu Leu Ile Ala Ala Ser
 275 280 285
 Ile Ile Phe Thr Gly Trp Trp Leu Gly Tyr Asn Asn Leu Leu Val Leu
 290 295 300
 Lys Asn Lys
 305

<210> 6301

<211> 317

<212> PRT

<213> B.fragilis

<400> 6301

Asn Gly Gly Cys Leu Ile Lys Arg Asn Phe Phe Cys Pro Leu Gln Tyr
 1 5 10 15
 Leu Arg His Ile Lys Leu Trp Asn Glu Arg Lys Met Ala Asp Asn Val
 20 25 30
 Lys Ala Asn Lys Met Asn Ser Gln Ala Asp Asp Asp Ile Gly Phe Gly
 35 40 45
 Ile Tyr Thr Asp Ile Ala Asp Leu Pro Met Thr Gly Cys Pro Ser Tyr
 50 55 60
 Ile Glu Glu Gly Ile Gly Gly Val Cys Glu Ser Gly Thr Ala Thr Ile
 65 70 75 80
 Val Val Phe Asp Val Pro Phe Gln Ile Val Pro Asn Val Val Ile Thr
 85 90 95
 Leu Met Pro Trp Gln Leu Val Phe Ile Lys Glu Ile Ser Glu Asp Phe
 100 105 110

Arg Ile Thr Phe Phe Lys Ile Ser Lys Asp Met Phe Ser Glu Thr Leu
 115 120 125
 Ser Thr Leu Trp Arg Pro Ala Ser Gly Phe Leu Leu Tyr Met Arg Lys
 130 135 140
 His Ile Val Ser Ile Pro Asp Gly Glu Leu Ile Gly Arg Phe Leu Ala
 145 150 155 160
 Tyr Cys Asn Leu Leu Val Tyr Arg Met Lys His Thr Pro Gln Asn Cys
 165 170 175
 Arg Gln Glu Ser Ile Met Gln Leu Leu Arg Val Tyr Phe Trp Asp Val
 180 185 190
 Tyr Thr Val Tyr Ile Asn Asp Pro Gln Ala Glu Lys Ser Leu Lys Phe
 195 200 205
 Thr Arg Lys Asp Glu Tyr Val Tyr Gln Phe Val Arg Leu Ile Ile Glu
 210 215 220
 Asp His Ser Pro Asp Lys Asp Val Ala Tyr Phe Ala Gln Lys Leu Gly
 225 230 235 240
 Ile Ser Pro Lys Arg Leu Thr Asn Leu Ile Arg Ser Ile Ser Gly Gln
 245 250 255
 Ser Ala Arg Glu Trp Ile Val Tyr Tyr Thr Ile Leu Glu Ile Lys Ser
 260 265 270
 Leu Leu Arg Glu Ser Ser Leu Asp Ile Lys Ser Ile Ala Ala Arg Val
 275 280 285
 Asn Phe Pro Asp Gln Thr Thr Leu Ser Arg Tyr Phe Arg His Tyr Thr
 290 295 300
 Gly Val Thr Pro Ser Gln Tyr Arg Lys Asn Ile Tyr Phe
 305 310 315

<210> 6302

<211> 214

<212> PRT

<213> B.fragilis

<400> 6302

Phe Tyr Val Arg Lys Gln Asn Ala Val Arg His Met Gln Thr Leu Lys
 1 5 10 15
 Ser Asp Ile Arg Asn Arg Ile Leu Ser Ala Ala Lys Glu Gln Phe Val
 20 25 30
 Gln Arg Gly Tyr Leu Lys Thr Ser Met Arg Glu Ile Ala Asp Ala Val
 35 40 45
 Asp Val Gly Val Gly Asn Leu Tyr Asn Tyr Phe Glu Asn Lys Asp Glu
 50 55 60
 Leu Phe Cys Val Ile Leu Arg Pro Val Ser Asp Ala Leu Glu Arg Met
 65 70 75 80
 Leu Gln Glu His His Gly Ala Lys Gly Ala Asp Ile Met Leu Ile Cys
 85 90 95
 Ser Glu Glu Tyr Leu Lys Ser Ala Val Asp Glu Tyr Ile Ser Leu Ile
 100 105 110
 Asn Lys His Gly Glu Leu Met Lys Ile Leu Leu Phe His Ser Gln Gly
 115 120 125
 Ser Ser Leu Glu Thr Phe Arg Glu Asp Tyr Thr Asn Arg Ser Thr Glu
 130 135 140
 Met Val Lys Thr Trp Phe Ala Glu Met Lys Glu Lys His Pro Glu Ile
 145 150 155 160
 Asn Val Val Val Ser Asp Phe Met Ile His Leu Gln Ala Val Trp Met
 165 170 175
 Phe Thr Leu Phe Glu Glu Met Leu Lys His Ala Ile Asp Ser Lys Glu
 180 185 190
 Met Glu Tyr Ile Val His Glu Tyr Ile Leu Phe Glu Ile Gln Gly Trp
 195 200 205

Arg Ala Leu Leu Arg Val
210

<210> 6303
<211> 288
<212> PRT
<213> B.fragilis

<400> 6303

Thr	Arg	Asn	Ser	Leu	Thr	Met	Lys	Leu	Leu	His	Ile	Glu	Arg	His	Thr
1				5					10					15	
Thr	Cys	Leu	Asn	Tyr	Val	Ser	Asp	Tyr	Asn	Ile	Cys	Phe	Ile	His	Gln
			20					25					30		
Arg	Leu	Phe	Ser	Gly	Gly	Asp	Phe	Lys	Ile	Asp	Asn	His	His	His	Ser
		35					40					45			
Cys	Ile	Leu	Phe	Leu	Leu	Lys	Gly	Glu	Ile	Leu	Thr	Ser	Cys	Ser	Glu
	50					55					60				
Phe	His	Asp	Gln	His	Ile	Val	Glu	Gly	His	Met	Val	Leu	Phe	Pro	Gln
65					70					75				80	
Asn	Asp	Pro	Asn	Gln	Ser	Lys	Ser	Met	Thr	Glu	Thr	Glu	Phe	Ile	Leu
			85						90					95	
Leu	Phe	Phe	Asp	Asn	Gln	Val	Asn	Leu	His	Ser	Lys	Met	Ser	Ile	Glu
			100					105						110	
Leu	Ser	Ala	Ile	His	Leu	Glu	Ser	Glu	Lys	Ser	Cys	Phe	Tyr	Ser	Leu
		115						120					125		
Ser	Ile	Cys	Pro	Pro	Leu	Arg	His	Val	Leu	Asp	Ser	Ile	Cys	Phe	Tyr
	130					135					140				
Leu	Lys	Gln	Lys	Val	Gln	Cys	Ser	His	Met	His	Glu	Leu	Lys	Gln	Lys
145					150					155					160
Glu	Ile	Phe	Met	Val	Phe	Gly	Thr	Phe	Tyr	Asn	Arg	Thr	Asp	Met	Ala
				165					170					175	
His	Phe	Leu	Met	Pro	Ile	Thr	Gly	Arg	Asp	Pro	Asn	Phe	Lys	Ser	Phe
			180					185					190		
Val	Leu	Glu	Asn	Tyr	Leu	Gln	Ile	Arg	Asn	Ile	Lys	Gln	Phe	Ala	Gln
		195					200					205			
Leu	Tyr	His	Cys	Ser	Glu	Arg	Ser	Phe	Asn	Arg	Lys	Phe	Lys	Ser	Cys
	210					215					220				
Phe	His	Asp	Thr	Pro	Tyr	Asn	Trp	Ile	Leu	Asn	Gln	Lys	Thr	Arg	His
225					230					235					240
Ile	Lys	Gly	Gln	Leu	Ala	Asn	Arg	Asn	Ile	Pro	Ile	Ser	Glu	Ile	Ala
				245					250					255	
Arg	Thr	Phe	His	Phe	Ala	Ser	Pro	Ser	His	Phe	Thr	Thr	Tyr	Cys	Lys
			260					265					270		
Lys	Arg	Leu	Gly	Ile	Thr	Pro	Ser	Glu	Phe	Arg	Glu	Lys	Ile	Ala	Lys
		275					280					285			

<210> 6304
<211> 200
<212> PRT
<213> B.fragilis

<400> 6304

Lys	Val	Pro	Gly	Cys	Ala	Asp	Arg	Leu	Val	Ser	Gln	Asp	Asp	His	Thr
1				5					10					15	
Val	Ile	Thr	Ser	Val	Phe	Gly	Glu	Gln	Phe	Ala	Pro	Arg	Thr	Glu	Leu
			20					25					30		
Ser	Ile	Val	Thr	Pro	Pro	Val	Asp	Pro	Leu	Lys	Gln	Arg	Ser	Glu	Thr
		35					40					45			
His	Thr	Ala	Tyr	Leu	Asn	Phe	Glu	Val	Asp	Lys	Tyr	Val	Met	Ser	Arg

50	Asn Tyr Lys Asn Asn Ala Asn Val Leu Ala Asp Val Asp Arg Ile Val	55	60
65	70	75	80
Asn Glu Ile Gln Asn Asp Ser Asn Leu Thr Val Thr Glu Phe Arg Val	85	90	95
Thr Gly Tyr Ala Ser Pro Glu Gly Asp Tyr Ser Arg Asn Met Glu Leu	100	105	110
Ser Glu Asn Arg Ala Leu Ala Phe Val Gly Tyr Leu Gln Asn Leu Gly	115	120	125
Gly Val Asp Glu Ser Leu Leu Thr Val Asp Trp Lys Gly Glu Asp Trp	130	135	140
Ser Gly Met Arg Arg Glu Val Ala Ala Ser Ser Met Ile Asp Lys Ala	145	150	155
Ala Ile Leu Ala Val Ile Gly Glu His Thr Asp Phe Ala Thr Arg Lys	165	170	175
Lys Ser Val Ala Gly Val Glu Cys Arg Asn Tyr Leu Gln Asp Val Thr	180	185	190
Glu Gly Leu Leu Ser Ala Tyr Thr	195	200	

<210> 6305

<211> 197

<212> PRT

<213> B.fragilis

<400> 6305

Ser Val Tyr Ile Ile Glu Glu Thr Ser Met Lys Lys Leu Ile Leu Phe	1	5	10	15
Gly Ala Ala Ile Ser Ile Ser Val Ala Val Ser Ala Gln His Val Ala	20	25	30	
Leu Lys Asn Asn Leu Leu Tyr Asp Ala Thr Thr Thr Pro Asn Leu Ala	35	40	45	
Leu Glu Val Gly Leu Gly Lys Lys Thr Thr Leu Asp Leu Tyr Gly Gly	50	55	60	
Tyr Asn Pro Phe Thr Phe Gly Asn His Lys Arg Phe Lys His Trp Leu	65	70	75	80
Ala Gln Pro Glu Phe Arg Tyr Trp Thr Cys Glu Arg Phe Asn Gly Thr	85	90	95	
Phe Trp Gly Val His Leu His Gly Gly Glu Phe Ser Val Ala Gly Ile	100	105	110	
Ser Leu Pro Phe Lys Ile Phe Pro Ser Leu Lys Asp His Arg Tyr Glu	115	120	125	
Gly Tyr Phe Tyr Gly Gly Gly Val Ser Val Gly His Gln Trp Leu Leu	130	135	140	
Ser Lys His Trp Ser Leu Glu Ala Ser Val Gly Val Gly Tyr Ala His	145	150	155	160
Trp Val Tyr Asp Lys Tyr Arg Cys Val Asn Cys Ser Pro Lys Ile Lys	165	170	175	
Ser Gly His Lys Asn Tyr Val Gly Pro Thr Lys Ala Ala Val Ser Leu	180	185	190	
Val Tyr Phe Ile Arg	195			

<210> 6306

<211> 119

<212> PRT

<213> B.fragilis

<400> 6306

Gln Val Arg Ile Leu Ile Ile Ile Lys Lys Ile Thr Ile Met Lys Lys
 1 5 10 15
 Val Leu Val Ala Val Ala Leu Val Met Gly Leu Gly Ser Ser Val Ala
 20 25 30
 Phe Ala Gln Glu Val Glu Asn Ser Thr Ala Val Glu Thr Gln Ala Gln
 35 40 45
 Ala Pro Gln Asp Glu Phe Thr Lys Ile Asp Ala Gln Lys Leu Pro Asp
 50 55 60
 Ala Val Met Asn Ala Leu Ala Lys Ser Tyr Glu Gly Ala Ser Ile Lys
 65 70 75 80
 Glu Val Tyr Ser Ala Asp Lys Glu Thr Gly Lys Ile Tyr Lys Val Ile
 85 90 95
 Leu Thr Thr Lys Asp Ser Gln Glu Val Thr Val Leu Leu Asp Glu Lys
 100 105 110
 Gly Glu Glu Ile Lys Glu Ala
 115

<210> 6307

<211> 275

<212> PRT

<213> B.fragilis

<400> 6307

Lys Tyr Arg Met Lys Gln Lys His Glu Phe Glu Asn Ile Val Ala Glu
 1 5 10 15
 Thr Leu Leu Ile Pro Leu Tyr Met Arg Ala Lys Glu Asn Arg Arg Lys
 20 25 30
 Asn Pro Ile Leu Cys Asp Lys Leu Ala Glu Gln Leu Val Glu Asn Ile
 35 40 45
 Glu Tyr Asp Tyr Ser Arg Phe Asp Gly Ala Lys Leu Ser Glu Val Gly
 50 55 60
 Cys Val Ile Arg Gly Trp Tyr Phe Asp His Ala Ile Arg Arg Phe Ile
 65 70 75 80
 Asp Thr His Thr Cys Pro Val Val Val Asn Val Gly Cys Gly Leu Asp
 85 90 95
 Thr Arg Tyr Gln Arg Val Gly Asn Asp Gly Lys Ala Val Phe Tyr Glu
 100 105 110
 Leu Asp Leu Pro Glu Val Ile Ala Ile Arg Arg Arg Leu Ile Pro Glu
 115 120 125
 Pro Glu Asn Asp Cys Tyr Leu Ser Ala Ser Leu Leu Glu Thr Asp Trp
 130 135 140
 Met Asp Arg Ile Arg Leu Leu His Pro Asn Gly Asp Phe Ile Phe Val
 145 150 155 160
 Val Glu Gly Val Leu Met Tyr Phe Arg Glu Glu Gln Val Arg Thr Phe
 165 170 175
 Leu His Asn Ile Thr Met Arg Phe Glu Gly Gly Glu Leu Trp Phe Asp
 180 185 190
 Val Cys Gly Thr Met Met Ser Arg Arg Gly Val Lys Pro Asp Ser Leu
 195 200 205
 Arg Glu His Lys Ala Gln Ile Arg Ser Gly Ile Asp Asp Gly His Met
 210 215 220
 Val Glu Leu Trp Glu Pro Gly Leu His Leu Leu Glu Gln Ala Asn Tyr
 225 230 235 240
 Met Lys Phe Phe Arg Ser Arg Trp Gly Phe Phe Phe Gly Gln Ile Leu
 245 250 255
 Gly Arg Met Thr Lys Leu Cys Tyr Lys Phe Ser Ser Met Leu Gly Tyr
 260 265 270
 Lys Ile Gly
 275

<210> 6308
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 6308

Arg	Thr	Gln	Ile	Ser	Gly	Leu	Met	Gly	Pro	Gly	Ser	Lys	Thr	Asp	Ile
1				5					10					15	
Lys	Gln	Pro	Ile	Ala	Glu	Pro	Ile	Lys	Glu	Glu	Val	Arg	Cys	Ser	Gly
		20						25					30		
Gln	Lys	His	Leu	Phe	Ser	Ser	Ile	Arg	His	Ser	Pro	Asp	Val	Lys	Phe
		35					40					45			
Ala	Phe	His	Phe	Ile	His	Ile	Asn	Tyr	Asn	Asn	Pro	Leu			
	50					55					60				

<210> 6309
 <211> 238
 <212> PRT
 <213> B.fragilis

<400> 6309

Ile	Leu	Met	Val	Ile	Ile	Gly	Val	Phe	Ala	Gln	Gly	Asp	Thr	Arg	Gln
1				5					10					15	
Thr	Leu	Trp	Gly	Phe	Phe	Gly	Gly	Leu	Leu	Phe	Trp	Thr	Gly	Trp	Val
		20						25					30		
Glu	Phe	Leu	Phe	Met	Tyr	Phe	Ala	Asn	Arg	Phe	Gly	Thr	Gln	Pro	Glu
		35					40					45			
Leu	Asp	Pro	Val	Thr	Gly	Glu	Ile	Val	Thr	Arg	Pro	Glu	Tyr	Leu	Ile
	50					55					60				
Leu	Pro	Ala	Ser	Phe	Gly	Phe	Trp	Met	Met	Val	Met	Val	Met	Tyr	Leu
65					70					75				80	
Phe	Ser	Thr	Lys	Asn	Gly	Cys	Asn	Phe	Ile	Asn	Trp	Trp	Gln	Arg	Leu
			85					90						95	
Leu	Leu	Arg	Gly	Arg	Lys	Ala	Asp	Ile	Ala	Ala	Arg	Pro	Met	Thr	Arg
		100						105					110		
His	Val	Ser	Ile	Ile	Thr	Phe	Met	Glu	Leu	Met	Met	Ile	Leu	Trp	Thr
		115					120					125			
Ser	Tyr	Leu	Val	Leu	Met	Phe	Cys	Tyr	Asp	Asp	Val	Phe	Leu	Gly	Glu
	130					135					140				
His	His	Pro	Val	Thr	Leu	Leu	Val	Gly	Leu	Gly	Cys	Leu	Val	Gly	Ala
145					150					155				160	
Phe	Phe	Ile	Phe	Val	Lys	Gln	Leu	Arg	Ile	Ala	Ser	Trp	Gly	Ala	Asn
			165						170					175	
Ile	Arg	Met	Ala	Ile	Ala	Thr	Val	Val	Val	Phe	Trp	Thr	Pro	Val	Glu
		180						185					190		
Ile	Leu	Gly	Arg	Met	Asn	Leu	Phe	Ser	Glu	Ile	Trp	Ile	Asp	Pro	Met
	195					200						205			
Asn	His	Val	Met	Glu	Met	Gly	Ile	Ile	Leu	Ala	Val	Phe	Ile	Ile	Leu
	210					215					220				
Thr	Val	Tyr	Leu	Trp	Tyr	Met	Ser	Ala	Lys	Lys	Lys	Lys	Arg		
225					230						235				

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 <212> PRT
 <213> B.fragilis

<400> 6310

Met	Ser	Asn	Ser	Ser	Ile	Lys	Ser	Lys	Thr	Ala	Leu	Leu	Arg	Asn	Gly
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Glu	Thr	Gln	Lys	Gly	Asn	Gly	Tyr	Pro	Glu	Ala	Asn	Asp	Tyr	Ser	Ala
			20					25					30		
Arg	Ile	Leu	Glu	Thr	Met	Gln	Thr	Gly	Val	Ile	Phe	Phe	Asn	Thr	Glu
		35					40					45			
Gln	Ile	Ile	Ser	Gly	Ile	Asn	Asn	Leu	Ala	Cys	Glu	Asp	Leu	Gln	Ile
	50					55					60				
Pro	Arg	Asp	Pro	Ser	Gly	His	Lys	Ile	Thr	Asp	Ile	Ile	Ser	Ile	Ile
65					70					75					80
His	Gln	Glu	Lys	Asp	Ile	Phe	Pro	Glu	Leu	Ile	Ala	Arg	Leu	Lys	Ser
				85					90					95	
Ser	Glu	Thr	Asp	Met	Glu	Lys	Leu	Pro	Ile	Asp	Thr	Leu	Ile	Arg	Ser
			100					105					110		
Leu	Glu	Thr	Lys	Val	Gln	Phe	Phe	Ala	Ser	Gly	Cys	Ile	Met	Gln	Leu
		115					120					125			
Glu	Thr	Gly	Arg	Tyr	Leu	Leu	Ala	Phe	Arg	Asn	Thr	Met	Asp	Glu	Val
	130					135					140				
Thr	His	Glu	His	Leu	Leu	Ser	Met	Ile	Leu	Ala	Arg	Thr	Lys	Ile	Phe
145				150						155					160
Pro	Trp	Phe	Phe	Asp	Leu	Lys	Arg	Asn	Lys	Met	Leu	Ile	Asp	Ala	His
				165					170					175	
Trp	Phe	Ser	Tyr	Leu	Gly	Ile	Pro	Ala	Glu	Asp	Cys	Glu	Ile	Thr	Ile
			180					185					190		
Glu	Lys	Phe	Phe	Ser	Arg	Val	His	Pro	Asn	Glu	Arg	Asp	Met	Leu	Ala
		195					200					205			
Asp	Ala	Leu	Gln	Lys	Gln	Leu	Ser	Glu	Lys	Glu	Ile	Pro	Asp	Ser	Phe
	210					215					220				
Ser	Tyr	Arg	Leu	Gln	Arg	Gly	Asp	Gly	Ser	Trp	Glu	Trp	Phe	Ser	Glu
225				230						235					240
Gln	Ser	Met	Tyr	Leu	Ser	Lys	Thr	Asn	Asp	Gly	Ser	Pro	Tyr	Arg	Ile
				245					250					255	
Val	Gly	Val	Cys	His	Ser	Ile	Gln	Glu	His	Lys	Asn	Thr	Glu	Asp	Lys
			260					265					270		
Leu	Arg	Ala	Ala	Arg	Asn	Lys	Ala	Gln	Glu	Ser	Asp	Arg	Leu	Lys	Ser
		275					280					285			
Ala	Phe	Leu	Ala	Asn	Met	Ser	His	Glu	Ile	Arg	Thr	Pro	Leu	Asn	Ala
	290					295					300				
Ile	Val	Gly	Phe	Ser	Asn	Leu	Ile	Ala	Gly	Gly	Ile	Val	Asp	Leu	Asp
305					310					315					320
Thr	Glu	Glu	Ala	Arg	Asp	Tyr	Ser	Ala	Leu	Ile	Ser	Lys	Asn	Cys	Asn
				325					330					335	
Tyr	Leu	Leu	Thr	Leu	Val	Ser	Asp	Val	Leu	Asp	Leu	Ser	Cys	Ile	Glu
			340					345					350		
Ser	Asp	Thr	Met	Thr	Phe	Lys	Phe	Thr	Val	Tyr	Pro	Leu	Thr	Arg	Leu
		355					360					365			
Leu	Thr	Glu	Ile	Tyr	Gln	Lys	Tyr	Glu	Asn	Arg	Ile	Pro	Gln	Glu	Val
	370					375					380				
Gln	Phe	Asn	Leu	Leu	Leu	Pro	Thr	Asp	Asn	Val	Glu	Ile	Glu	Thr	Asp
385					390					395					400
Ala	Val	Arg	Leu	Arg	Gln	Val	Ile	Glu	His	Leu	Leu	Asp	Asn	Ala	Ala
				405					410					415	
Lys	Phe	Thr	Val	Lys	Gly	His	Ile	Asp	Ile	Gly	Tyr	Ala	Leu	Ser	Asp
			420					425					430		
His	Gly	Glu	Lys	Ile	Tyr	Val	Phe	Val	Ala	Asp	Thr	Gly	Cys	Gly	Ile
		435					440					445			
Pro	Ser	Asp	Gln	Tyr	Lys	Lys	Val	Phe	Glu	Arg	Phe	Tyr	Lys	Ile	Asp
	450					455					460				
Ser	Phe	Val	Gln	Gly	Ala	Gly	Leu	Gly	Leu	Ser	Val	Cys	Lys	Thr	Ile

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465		470		475		480									
Val	Glu	Gly	Leu	Gly	Gly	Thr	Ile	Asn	Val	Tyr	Ser	Gln	Leu	Lys	Glu
		485		490		495									
Gly	Ser	Arg	Phe	Ser	Val	Ile	Leu	Pro	Leu	Asn	Arg	Leu	His	Lys	
		500						505					510		

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 <212> PRT
 <213> B.fragilis

<400> 6311

Ser	Asn	Phe	Pro	His	Thr	Phe	Ile	Trp	Gly	Glu	Ala	Gln	Gly	Glu	Ala
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Leu	Ile	Thr	Ser	Gly	Thr	Ser	Ala	Asp	Gly	Met	Gly	Met	Leu	Tyr	Gly
			20					25					30		
Asp	Ile	Lys	Leu	Gln	Asn	Leu	Ile	Glu	Asp	His	Thr	Glu	Gly	Ile	Lys
		35				40						45			
Lys	Phe	Gly	Asp	Ile	Phe	Gly	Arg	Leu	Thr	Asn	Leu	Asn	Leu	Phe	Ile
	50					55					60				
Ala	Arg	Val	Thr	Asp	Ala	Thr	Tyr	Met	Asp	Asp	Val	Lys	Lys	Gly	Tyr
65					70					75					80
Tyr	Leu	Gly	Gln	Ala	Tyr	Gly	Leu	Arg	Ala	Phe	Tyr	Tyr	Phe	Asp	Leu
			85					90						95	
Tyr	Arg	Thr	Tyr	Gly	Gly	Val	Pro	Leu	Arg	Leu	Thr	Ala	Asp	Val	Val
			100					105						110	
Glu	Gly	Val	Ile	Asp	Pro	Asn	Lys	Leu	Tyr	Met	Ala	Arg	Ala	Thr	Pro
		115					120						125		
Lys	Glu	Val	Met	Asp	Gln	Ile	Lys	Lys	Asp	Leu	Asp	Lys	Ser	Met	Glu
	130					135					140				
Ser	Phe	Gly	Asp	Asn	Asn	Ser	Phe	Asp	Pro	Asn	Asn	Arg	Gly	Asn	Lys
145					150					155					160
Lys	Gly	Tyr	Trp	Ser	Lys	Ala	Ala	Thr	Glu	Cys	Leu	Met	Gly	Glu	Val
			165					170						175	
Tyr	Leu	Trp	Ile	Ser	Lys	Val	Ser	Thr	Gly	Asp	Asp	Ala	Ala	Asn	Glu
		180						185						190	
Ala	Asn	Leu	Glu	Ile	Ala	Lys	Thr	His	Leu	Gln	Asn	Val	Ile	Asn	Asn
	195					200						205			
Tyr	Gly	Leu	Lys	Met	Leu	Asp	Phe	Ser	Ser	Val	Phe	Asp	Ala	Lys	
	210					215				220					
Asn	Gly	Lys	Gly	Asn	Ser	Glu	Ile	Ile	Phe	Ala	Val	Arg	Tyr	Met	Glu
225				230						235					240
Gly	Glu	Ala	Gly	Asn	Asn	Asn	Asn	Leu	Phe	Thr	Tyr	Ala	Met	Ala	Thr
			245					250						255	
Gly	Ser	Thr	Lys	Asp	Asn	Tyr	Leu	Ala	Asn	Gly	Glu	Lys	Phe	Leu	Asp
			260					265						270	
Ala	Leu	Asn	Ile	Ala	Asn	Thr	Gly	Ser	Gln	Gln	Leu	Glu	Tyr	Lys	His
	275					280							285		
Glu	Ile	Tyr	Asn	Ser	Phe	Asp	Val	Ala	Asp	Thr	Arg	Arg	Glu	Ala	Thr
	290					295					300				
Phe	Ile	Ala	Ser	Tyr	Ser	Lys	Asn	Thr	Glu	Thr	Lys	Glu	Leu	Thr	Leu
305					310						315				320
Arg	Gly	Thr	His	Val	Arg	Lys	Asn	Ile	Gly	Tyr	Val	Asn	Ala	Gln	Gly
			325						330					335	
Ser	Arg	Ile	Tyr	Cys	Gly	Asp	Tyr	Ile	Ile	Tyr	Arg	Leu	Pro	Leu	Val
		340						345					350		
Tyr	Leu	Met	Leu	Ala	Glu	Ile	Glu	Asn	Met	Gln	Gly	Gly	Asp	Val	Ala
	355					360						365			
Lys	Tyr	Ile	Asn	Leu	Val	Arg	Glu	Arg	Ala	Tyr	Ser	Thr	Asn	Trp	Asp

370		375		380
Lys Ala Ile Tyr Gly Tyr Thr Asn Ala Asp Phe Thr Thr Asn Glu Leu				
385		390		395
Ala Ile Leu His Glu Lys Asp Lys Glu Phe Ile Gln Glu Gly Gln Arg				400
	405		410	415
Trp Trp Asp Ile Arg Arg Met Thr Leu Thr Lys Gly Gly Lys His Leu				
	420		425	430
Val Phe Val Lys Glu Gly Ser Ile Gly Thr Asp Met Pro Thr Leu Asp				
	435		440	445
Glu Ala Thr Glu Ala His Lys Val Leu Trp Pro Val Asp Lys Asp Leu				
	450		455	460
Leu Gly Asn Asp Pro Leu Ile Tyr Gln Thr Pro Gly Tyr Ala Thr Tyr				
465		470		475
Lys Lys Ala Glu				480

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 <212> PRT
 <213> B.fragilis

<400> 6312

Leu Lys Lys Ala Ile Leu Met Lys Lys Thr Ile Phe Leu Ile Leu Cys				
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Ile Leu Cys Ser Leu Gly Ala Met Ala Gln Lys Lys Ser Ile Thr Gly				
	20		25	30
Val Val Met Asp Ala Ser Gly Glu Ser Ile Ile Gly Ala Ser Val Val				
	35		40	45
Glu Val Gly Thr Thr Asn Gly Val Ile Thr Asp Ile Ser Gly Lys Phe				
	50		55	60
Thr Leu Met Val Asp Pro Asn Gly Lys Ile Lys Val Ser Tyr Ile Gly				
65		70		75
Tyr Gln Pro Gln Val Leu Asp Val Lys Gly Arg Asn Ser Phe Asn Ile				
	85		90	95
Lys Leu Lys Glu Asp Ser Glu Met Leu Asp Glu Val Val Val Thr Gly				
	100		105	110
Tyr Gly Gly Lys Gln Leu Arg Thr Lys Val Thr Asn Ser Ile Ser Lys				
	115		120	125
Val Ser Glu Glu Ser Leu Lys Val Gly Val Phe Ser Asn Pro Ala Gln				
	130		135	140
Ala Leu Ser Gly Ala Val Ser Gly Leu Lys Val Thr Gln Ser Ser Gly				
	145		150	155
Asn Pro Gly Ser Thr Pro Thr Ile Val Leu Arg Gly Gly Thr Glu Trp				
	165		170	175
Asp Gly Ser Gly Ser Pro Leu Val Met Val Asp Gly Gln Leu Arg Asp				
	180		185	190
Gly Leu Asn Asp Ile Asn Pro Glu Asp Ile Glu Ser Met Glu Val Leu				
	195		200	205
Lys Asp Ala Gly Ala Thr Ala Leu Tyr Gly Ala Arg Ala Ser Asn Gly				
	210		215	220
Val Ile Leu Ile Thr Thr Lys Thr Gly Lys Val Gly Lys Ala Glu Ile				
	225		230	235
Asn Leu Lys Ala Lys Val Gly Met Asn Tyr Ile Asn Asn Pro Tyr Asp				
	245		250	255
Phe Leu Gly Ala Lys Asp Phe Ile Thr Ala Ile Arg Thr Ala Tyr Asp				
	260		265	270
Thr Thr Pro Trp Ala Ser Lys Ser Ser Leu Asp Gly Ala Ser Ala Tyr				
	275		280	285
Gly Thr Gly Asn Lys Tyr Gly Ser Asp Leu Val Trp Asn Leu Leu Val				

290	295	300
Lys Asp Ser Gly Asn Glu Phe Leu Leu Asn Lys Gly Trp Gln Gln Met		
305	310	315
Gln Asp Pro Leu Asn Ser Ser Ile Thr Leu Leu Tyr Lys Asp Ile Lys		
	325	330
Pro Ser Asp Tyr Asn Leu Asn Asn Pro Ser Leu Thr Gln Asp Tyr Asn		
	340	345
Val Asn Met Ser Gly Gly Asn Asp Lys Gly Thr Tyr Tyr Ala Gly Leu		
	355	360
Gly Tyr Asn Lys Ser Glu Gly Leu Pro Ile Ser Ser Phe Tyr Glu Arg		
	370	375
Tyr Ser Phe Ile Phe Asn Gly Ser Tyr Lys Leu Ala Asp Trp Ile Thr		
385	390	395
Ala Asn Ser Asn Phe Asn Tyr Asn Arg Ala Asn Trp Arg Ser Met Pro		
	405	410
Gly Ser Gln Asp Asn Glu Gly Asn Tyr Phe Gly Arg Ile Met Ser Leu		
	420	425
Pro Pro Thr Val Arg Tyr Glu Asp Glu Asp Gly Asn Pro Val Leu Gly		
	435	440
Pro Asn His Ser Asp Gly Asn Gln Ser Tyr Gln Pro Glu Lys Trp Leu		
450	455	460
Val Asp Asn Gln Thr Asp Lys Phe Thr Met Ile Gln Ser Leu Glu Ile		
465	470	475
Arg Pro Met Lys Asn Leu Val Ile Lys Gly Thr Ala Asn Trp Tyr Tyr		
	485	490
Ser Glu Gly Val Tyr Glu Ser Phe Thr Lys Asp Phe Glu Thr Ala Pro		
	500	505
Gly Lys Phe Asn Thr Thr Arg Ala Ser Ser Ala Lys Phe Glu Arg Asp		
	515	520
Phe Ser Gln Thr Tyr Asn Val Val Leu Asn Tyr Asn Asn Thr Phe Ala		
	530	535
Gln Asn His Asn Ile Asp Val Met Leu Gly Ser Glu Tyr Tyr Asp Lys		
545	550	555
Lys Thr Lys Gly Phe Ser Ala Ser Gly Ser Gly Ala Pro Thr Asp Asp		
	565	570
Phe Ala Asp Leu Asn Leu Thr Asp Asn Gly Glu Gly Lys Arg Thr Ile		
	580	585
Asp Ser Trp His Ser Gln Tyr Arg Ile Leu Ser Tyr Phe Gly Arg Leu		
	595	600
Asn Tyr Asp Tyr Gln Gly Lys Tyr Leu Leu Ser Gly Val Phe Arg Tyr		
	610	615
Asp Gly Tyr Ser Ser Leu Leu Gly Asp Asn Arg Trp Gly Phe Phe Pro		
625	630	635
Gly Val Ser Ala Gly Trp Ile Phe Gly Lys Glu Asp Phe Ile Lys Asn		
	645	650
Ala Val Pro Asp Leu Ser Phe Gly Lys Leu Arg Phe Ser Tyr Gly Val		
	660	665
Asn Gly Asn Ala Thr Gly Ile Gly Ala Tyr Thr Leu Gln Gly Ser Tyr		
	675	680
Asn Ser Gln Lys Tyr Asn Gly Asn Val Gly Tyr Leu Ile Gly Ala Leu		
	690	695
Pro Asn Pro Gly Leu Lys Trp Glu Lys Thr Arg Thr Thr Glu Val Gly		
705	710	715
Leu Asp Leu Ser Phe Asp Asn Arg Leu Asn Ala Asn Phe Thr Tyr		
	725	730
Tyr Asn Arg Leu Thr Met Asp Lys Tyr Ala Asp Leu Ser Leu Pro Thr		
	740	745
Thr Thr Gly Phe Ser Ser Val Lys Asn Asn Asn Gly Asp Phe Arg Asn		
	755	760
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Ser Gly Ile Glu Met Glu Leu Ser Gly Thr Ile Leu Lys Ile Lys Asp
 770 775 780
 Trp Thr Trp Lys Met Gly Gly Asn Ile Ser Tyr Asn Lys Asn Lys Val
 785 790 795 800
 Val Thr Leu Pro Asp Asn Gly Gln Pro Lys Asn Arg Ile Gly Gly Gln
 805 810 815
 Gln Ile Tyr Thr Gly Arg Lys Val Leu Asp Glu Ala Gly Asn Gln Val
 820 825 830
 Asp Glu Val Ile Phe Val Gly Gly Lys Gln Glu Arg Gln Glu Pro Gly
 835 840 845
 Ile Leu Val Gly Tyr Lys Ala Glu Gly Leu Tyr Lys Ser Trp Asp Asp
 850 855 860
 Ile Pro Glu Asn Leu Ile Val Lys Thr Gly Asn Tyr Gln Gly Lys Tyr
 865 870 875 880
 Gln Tyr Gly Pro Lys Ala Tyr Ala Ala Leu Ser Asp Ala Glu Lys Ala
 885 890 895
 Lys Ala Leu Gln Ile Ala Pro Gly Asp Val Lys Trp Lys Asp Ile Asn
 900 905 910
 Asn Asp Gly Thr Ile Asp Ala Phe Asp Gln Val Val Met Gly Asn Thr
 915 920 925
 Thr Pro His Trp Phe Gly Gly Phe Asn Thr Thr Leu Thr Trp Lys Gly
 930 935 940
 Leu Thr Leu Tyr Gly Arg Phe Asp Phe Ala Leu Asp Tyr Trp Ile Tyr
 945 950 955 960
 Asp Asn Thr Thr Pro Trp Phe Leu Gly Cys Met Gln Gly Gly Tyr Asn
 965 970 975
 Thr Thr Thr Asp Val Phe Asn Thr Trp Ser Glu Glu Asn Pro Asn Ala
 980 985 990
 Lys Tyr Pro Arg Tyr Val Trp Ala Asp Gln Leu Gly Thr Ala Asn Tyr
 995 1000 1005
 Tyr Arg Thr Ser Thr Met Phe Ala Tyr Lys Gly Asn Tyr Leu Ala Ile
 1010 1015 1020
 Arg Glu Ile Ser Leu Ser Tyr Ser Leu Pro Gln Asn Ile Ala Arg Lys
 1025 1030 1035 1040
 Phe Tyr Cys Gln Lys Leu Asp Val Ser Val Thr Gly Gln Asn Leu Gly
 1045 1050 1055
 Tyr Ile Thr Ser Ala Asn Val Ala Ser Pro Glu Val Ser Thr Ala Gly
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 Ser Gly Tyr Ala Leu Pro Arg Thr Leu Leu Phe Gly Val Asn Val Thr
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 Phe

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 <212> PRT
 <213> B.fragilis

<400> 6313
 Lys Glu Lys Tyr Met Lys Arg Ile Lys Ser Thr Ile Leu Tyr Gly Leu
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 Leu Val Ala Ser Ser Gly Leu Leu Val Thr Ser Cys Ala Asp Lys Leu
 20 25 30
 Asp Leu Ser Pro Ile Asp Tyr Tyr Gly Ser Gly Ser Tyr Trp Lys Thr
 35 40 45
 Glu Ala Gln Ala Thr Ala Tyr Ile Asp Gly Ile His Lys His Leu Arg
 50 55 60
 Asp Ala Ala Trp Gln His Thr Ile Thr Phe Gly Glu Leu Arg Gly Gly
 65 70 75 80

Arg	Phe	Ile	Thr	Gly 85	Ala	Ser	Ser	Asp	Gly 90	Met	Gly	Val	Ser	Asn	Gly
Asp	Ile	Ile	Leu	Gln	Asn	Phe	Asp	Glu	Thr	His	Thr	Gly	Val	Ser	Lys
			100					105					110		
Phe	Gly	Asp	Leu	Phe	Gly	Arg	Ile	Thr	Asn	Leu	Asn	Leu	Phe	Ile	Ala
			115					120					125		
Arg	Val	Thr	Asp	Ala	Thr	Tyr	Leu	Ser	Asp	Glu	Met	Lys	Asn	Phe	Tyr
			130				135					140			
Leu	Gly	Glu	Val	Tyr	Gly	Leu	Arg	Ala	Phe	Tyr	Tyr	Phe	Asp	Leu	Tyr
145					150					155					160
Arg	Ile	Tyr	Gly	Gly	Val	Pro	Leu	Arg	Leu	Thr	Ala	Asp	Val	Val	Glu
				165						170				175	
Gly	Val	Ile	Asp	Pro	Asn	Lys	Leu	Tyr	Met	Ala	Arg	Ser	Thr	Pro	Lys
			180						185				190		
Glu	Val	Met	Thr	Gln	Ile	Lys	Ser	Asp	Leu	Asn	Lys	Ser	Met	Glu	Tyr
			195					200					205		
Phe	Gly	Asn	Met	Asn	Asp	Phe	Asp	Pro	Tyr	Lys	Arg	Gly	Lys	Lys	Val
			210			215					220				
Tyr	Trp	Ser	Lys	Ala	Ala	Thr	Glu	Cys	Leu	Met	Gly	Glu	Val	Tyr	Leu
225					230					235					240
Trp	Thr	Ser	Lys	Val	Thr	Thr	Gly	Asp	Asp	Val	Ala	Asn	Pro	Ala	Asp
				245					250					255	
Leu	Thr	Ile	Ala	Lys	Thr	His	Leu	Glu	Ser	Val	Leu	Asn	Asn	Tyr	Asn
			260					265					270		
Leu	Lys	Met	Leu	Asp	Asp	Phe	Ser	Gln	Val	Phe	Asn	Ala	Lys	Asn	Lys
			275				280					285			
Ala	Asn	Asp	Glu	Ile	Ile	Phe	Ala	Ile	Arg	Phe	Leu	Glu	Gly	Glu	Ala
						295					300				
Thr	Asn	Ser	Asn	Gly	Thr	Phe	Thr	Tyr	Asn	Val	Gly	Thr	Gly	Ser	Thr
305					310					315					320
Lys	Asn	Arg	Tyr	Gln	Ala	Asn	Gly	Glu	Val	Phe	Gly	Asp	Ala	Leu	Asp
				325					330					335	
Ile	Gln	Asn	Thr	Gly	Asn	Gln	Thr	Tyr	Glu	Tyr	Asn	Lys	Ala	Val	Tyr
			340					345					350		
Gln	Asn	Phe	Asp	Asp	Ala	Asp	Thr	Arg	Lys	Glu	Ala	Thr	Phe	Ile	Ala
			355				360						365		
Ser	Tyr	Asn	Lys	Asp	Gly	Lys	Thr	Gly	Glu	Leu	Ser	Leu	Tyr	Gly	Thr
			370			375					380				
His	Val	Arg	Lys	Asn	Ile	Gly	Tyr	Val	Asn	Ala	Gln	Gly	Ala	Arg	Val
385					390					395					400
Tyr	Cys	Gly	Asp	Tyr	Ile	Phe	Tyr	Arg	Leu	Pro	Trp	Val	Tyr	Leu	Thr
				405					410					415	
Leu	Ala	Glu	Ile	Ala	Asn	Met	Glu	Gly	Asp	Asn	Ala	Ala	Val	Ala	Lys
			420					425					430		
Tyr	Ile	Asn	Leu	Val	Arg	Lys	Arg	Ala	Tyr	Gly	Asn	Al			

<210> 6314
 <211> 420
 <212> PRT
 <213> B.fragilis

<400> 6314

Asn	Leu	Asn	Gln	Met	Lys	Asn	Ile	Phe	Leu	Ile	Ile	Gly	Ile	Ser	Leu
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Phe	Phe	Asn	Gly	Ser	Leu	Tyr	Ala	Gln	Ser	Asp	Asp	Trp	Ser	Pro	Lys
		20						25					30		
Asn	His	Asn	Leu	Ile	Lys	Ser	Val	Arg	Glu	Asp	Gly	Arg	Phe	Ser	Ser
		35					40					45			
Ser	Tyr	Gly	Val	Val	His	Ala	Met	Leu	Arg	Asn	Thr	Glu	Pro	Arg	Tyr
	50					55					60				
Ala	Phe	His	Arg	Glu	Phe	Ser	Pro	Lys	Glu	Phe	Arg	Lys	Trp	Gln	Lys
65					70					75				80	
Gly	Leu	Arg	His	Ala	Met	Glu	Glu	Ile	Met	Lys	Phe	Pro	Gln	Ile	Lys
				85					90					95	
Asn	Ser	Pro	Ala	Pro	Val	Cys	Ile	Lys	Arg	Glu	Gln	Arg	Glu	Gly	Tyr
		100						105					110		
Arg	Leu	Glu	Lys	Trp	Glu	Phe	Tyr	Pro	Leu	Pro	Glu	Cys	Val	Ser	Thr
	115						120					125			
Phe	Leu	Val	Leu	Ile	Pro	Asp	Asn	Ile	Asn	Lys	Pro	Val	Pro	Ala	Ile
	130					135						140			
Leu	Cys	Ile	Pro	Gly	Ser	Gly	Gly	Asn	Lys	Glu	Gly	Leu	Ala	Gly	Glu
145					150					155					160
Pro	Gly	Ile	Ala	Pro	Lys	Leu	Asn	Asp	Arg	Tyr	Lys	Asp	Pro	Lys	Leu
				165					170					175	
Thr	Gln	Ala	Leu	Asn	Phe	Val	Lys	Glu	Gly	Tyr	Ile	Ala	Val	Ala	Val
			180					185					190		
Asp	Asn	Pro	Ala	Ala	Gly	Glu	Ala	Ser	Asp	Leu	Glu	Arg	Tyr	Thr	Leu
		195					200					205			
Gly	Ser	Asn	Tyr	Asp	Tyr	Asp	Val	Val	Ser	Arg	Tyr	Leu	Leu	Glu	Leu
	210					215					220				
Gly	Trp	Ser	Tyr	Leu	Gly	Tyr	Ala	Ser	Tyr	Leu	Asp	Met	Gln	Val	Leu
225					230					235					240
Asn	Trp	Met	Lys	Thr	Gln	Lys	His	Ile	Arg	Lys	Asp	Arg	Ile	Val	Val
				245					250					255	
Ser	Gly	Phe	Ser	Leu	Gly	Thr	Glu	Pro	Met	Met	Val	Leu	Gly	Thr	Leu
		260						265					270		
Asp	Thr	Ser	Ile	Tyr	Ala	Phe	Val	Tyr	Asn	Asp	Phe	Leu	Cys	Gln	Thr
		275					280					285			
Gln	Glu	Arg	Ala	Glu	Val	Met	Thr	Met	Pro	Asp	Lys	Asn	Gly	Arg	Arg
	290					295					300				
Pro	Phe	Pro	Asn	Ser	Ile	Arg	His	Leu	Ile	Pro	Asp	Phe	Trp	Lys	Asn
305					310					315					320
Phe	Asn	Phe	Pro	Asp	Ile	Val	Ala	Ala	Leu	Ala	Pro	Arg	Pro	Ile	Ile
				325					330					335	
Leu	Thr	Glu	Gly	Gly	Leu	Asp	Arg	Asp	Leu	Asp	Leu	Val	Arg	Lys	Ala
			340					345					350		
Tyr	Ala	Ile	Ala	Gly	Thr	Pro	Asp	Asn	Val	Lys	Ile	Tyr	His	Tyr	Lys
	355						360					365			
Lys	Phe	Ser	Asp	Pro	Asp	Thr	Arg	Lys	Asn	Val	Glu	Tyr	Leu	Pro	Glu
	370					375					380				
Gly	Leu	Asp	Arg	Asn	Glu	Tyr	Phe	Arg	Met	Val	Asn	Val	Asp	Gly	Pro
385					390					395					400
Asn	His	Tyr	Phe	Lys	Ser	Glu	Leu	Val	Val	Pro	Trp	Leu	Arg	Lys	Leu
				405					410					415	
Leu	Glu	Glu	Arg												

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500

420

<210> 6315
 <211> 543
 <212> PRT
 <213> B.fragilis

<400> 6315

Asn	Thr	Arg	Asn	Met	Lys	Thr	Ile	Lys	Ser	Ile	Ile	Ile	Ser	Gly	Met
1				5					10					15	
Leu	Leu	Val	Val	Ser	Gly	Gly	Ile	Met	Thr	Ser	Cys	Ser	Asp	Leu	Leu
			20					25					30		
Asp	Leu	Ser	Pro	Ile	Asp	Phe	Tyr	Gly	Ser	Gly	Ser	Tyr	Trp	Thr	Thr
		35					40					45			
Glu	Ala	Gln	Val	Thr	Gly	Tyr	Met	Asp	Gly	Leu	His	Lys	His	Leu	Arg
	50					55					60				
Asp	Val	Ala	Glu	Gln	His	Ile	Phe	Thr	Phe	Gly	Glu	Leu	Arg	Gly	Gly
65					70					75				80	
Ile	Tyr	Arg	Ser	Gly	Asn	Ala	Ser	Asp	Gly	Asn	Ala	Leu	Asn	Tyr	Gly
			85					90						95	
Ser	Ile	Ile	Leu	Gln	Asn	Phe	Asp	Arg	Asn	Asn	Thr	Gly	Val	Thr	Gly
			100					105					110		
Phe	Gly	Gly	His	Tyr	Gly	Arg	Leu	Ala	Asn	Ile	Asn	Leu	Phe	Ile	Asp
		115					120					125			
Arg	Val	Ser	Lys	Ala	Asp	Tyr	Ile	Asp	Asp	Ala	Lys	Lys	Lys	Phe	Tyr
		130				135					140				
Leu	Gly	Gln	Ala	Tyr	Gly	Leu	Arg	Ala	Phe	Ile	Tyr	Phe	Glu	Leu	Tyr
145					150					155				160	
Arg	Ile	Tyr	Gly	Gly	Val	Pro	Leu	Arg	Leu	Asp	Val	Glu	Val	Ile	Asp
			165						170					175	
Gly	Val	Leu	Asp	Pro	Asn	Lys	Leu	Tyr	Met	Ala	Arg	Ala	Thr	Pro	Lys
			180					185					190		
Glu	Val	Met	Thr	Gln	Ile	Lys	Lys	Asp	Leu	Asp	Leu	Ser	Met	Glu	His
		195					200					205			
Phe	Gly	Asn	Val	Thr	Ala	Phe	Asp	Pro	Tyr	Asn	Arg	Gly	Lys	Lys	Val
	210					215					220				
Tyr	Trp	Ser	Lys	Ala	Ala	Thr	Glu	Cys	Leu	Met	Gly	Glu	Val	Tyr	Leu
225				230						235				240	
Trp	Thr	Ser	Lys	Val	Thr	Thr	Gly	Asp	Asn	Glu	Ala	Asn	Ile	Ala	Asp
			245						250					255	
Leu	Ala	Ile	Ala	Lys	Gln	His	Leu	Gln	Ser	Val	Ile	Asp	Asn	Tyr	Gly
			260					265					270		
Leu	Ser	Met	Met	Asp	Asn	Phe	Ser	Asp	Val	Phe	Glu	Ala	Lys	Ser	His
		275					280					285			
Lys	Gly	Asn	Asn	Glu	Ile	Ile	Phe	Ala	Ile	Arg	Tyr	Leu	Glu	Gly	Glu
	290					295					300				
Ala	Thr	Asn	Arg	Asn	Val	Asn	Tyr	Thr	Tyr	Met	Asn	Gln	Gly	Glu	Ile
305					310					315				320	
Asp	Lys	Gly	Gly	Phe	Arg	Glu	Asp	Gly	Thr	Pro	Trp	Asn	Asp	Pro	Leu
			325						330					335	
Gly	Leu	Lys	Lys	Ser	Gly	Ala	Gln	Trp	Cys	Glu	Tyr	Ile	Pro	Glu	Leu
			340					345					350		
Phe	Gln	Leu	Phe	Asp	Val	Glu	Asp	Thr	Arg	Arg	Asp	Ala	Thr	Phe	Leu
		355					360					365			
Ala	Ser	Tyr	Lys	Lys	Asp	Lys	Asp	Gly	Asn	Leu	Ser	Leu	Trp	Gly	Thr
		370				375					380				
His	Val	Gln	Lys	Asn	Ile	Gly	Tyr	Ile	Asn	Ser	Glu	Gly	Asn	Arg	Val
385				390						395				400	
Phe	Cys	Gly	Asp	Tyr	Ala	Phe	Tyr	Arg	Leu	Pro	Trp	Val	Tyr	Leu	Ser

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			405				410				415				
Leu	Ala	Glu	Ile	Ala	Asn	Met	Glu	Ser	Asp	His	Ser	Gly	Ile	Glu	Lys
			420						425				430		
Tyr	Ile	Asn	Leu	Val	Arg	Lys	Arg	Ala	Tyr	Ala	Ser	Asn	Trp	Asp	Glu
		435					440					445			
Asn	Lys	His	Gly	Tyr	Lys	Ser	Gly	Asp	Phe	Thr	Gln	Asn	Glu	Leu	Ala
	450					455					460				
Ile	Leu	His	Glu	Lys	Asp	Lys	Glu	Phe	Val	Gln	Glu	Gly	Gln	Arg	Trp
465					470					475				480	
Trp	Asp	Val	Leu	Arg	Met	Thr	Leu	Thr	Lys	Gly	Gly	Lys	His	Leu	Val
				485					490					495	
Phe	Cys	Lys	Glu	Ala	Asn	Leu	Lys	Asn	Asp	Gly	Val	Pro	Ile	Leu	Asn
			500					505					510		
Glu	Ala	Thr	Glu	Ser	His	Lys	Val	Leu	Trp	Pro	Ile	Glu	Gln	Asn	Met
		515					520					525			
Leu	Asp	Lys	Asp	Pro	Ser	Ile	Lys	Gln	Thr	Pro	Gly	Tyr	Asp	Lys	
	530						535					540			

<210> 6316

<211> 71

<212> PRT

<213> B.fragilis

<400> 6316

Ala	Lys	Asn	Gly	Glu	Lys	Arg	Lys	Phe	Cys	Glu	Tyr	Phe	Gln	Thr	Ser
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Lys	Asn	Gln	Ala	Phe	Ile	Leu	Phe	Leu	Val	Leu	Val	Phe	Ser	Leu	His
		20					25					30			
Lys	Gly	Leu	Lys	Met	Asn	Leu	Leu	Glu	Gly	Asp	Lys	Ser	Ser	Ile	Lys
		35				40					45				
Ile	Arg	Leu	Ile	His	Leu	Leu	Lys	Asn	Glu	Leu	Met	Ile	Phe	Phe	Gln
	50					55					60				
Asn	Pro	Thr	Glu	Val	Arg	Cys									
65					70										

<210> 6317

<211> 443

<212> PRT

<213> B.fragilis

<400> 6317

Thr	Lys	Asp	Met	Lys	Phe	Tyr	Asn	Arg	Glu	Asn	Glu	Leu	Ala	Glu	Leu
1				5					10					15	
Gln	Arg	Ile	Gln	Glu	Leu	Ser	Phe	Glu	Glu	Asn	Ser	Arg	Leu	Thr	Val
		20					25					30			
Val	Thr	Gly	Arg	Arg	Arg	Ile	Gly	Lys	Thr	Ser	Leu	Ile	Met	Arg	Ala
		35				40						45			
Phe	Glu	Lys	Thr	Pro	Thr	Ile	Tyr	Leu	Phe	Val	Gly	Arg	Lys	Asn	Glu
	50					55					60				
Ala	Ser	Leu	Cys	Arg	Glu	Phe	Ile	Thr	Leu	Val	Ser	Gln	Ala	Leu	Asp
65				70					75					80	
Ile	Tyr	Val	Pro	Glu	Ile	Ser	Thr	Phe	Lys	Ser	Leu	Phe	Arg	Tyr	
			85					90					95		
Ile	Met	Glu	Val	Ala	Thr	Arg	Gln	Ser	Phe	Asn	Leu	Val	Ile	Asp	Glu
		100					105						110		
Phe	Gln	Glu	Phe	Tyr	Asn	Ile	Asn	Lys	Ser	Ile	Tyr	Ser	Asp	Ile	Gln
		115				120						125			
Asp	Ile	Trp	Asp	Gln	Tyr	Arg	Gln	Lys	Thr	His	Met	Asn	Phe	Val	Val
	130					135						140			

Ser Gly Ser Ile Tyr Ser Leu Met Glu Lys Ile Phe His Asn Glu Lys
 145 150 155 160
 Glu Pro Leu Phe Gly Arg Ala Asp Asn Ile Ile Lys Leu Ser Ala Phe
 165 170 175
 Ser Leu Asn Val Leu Lys Lys Ile Ile Lys Asp Tyr His Pro Gln Tyr
 180 185 190
 Thr Asn Asp Asp Leu Leu Ala Leu Tyr Ser Phe Ser Gly Gly Val Pro
 195 200 205
 Lys Tyr Val Glu Leu Phe Cys Asp Asn Arg Val Leu Thr Val Asp Gly
 210 215 220
 Met Ile Asp Phe Met Val Arg Asp Asn Ser Pro Phe Thr Asp Glu Gly
 225 230 235 240
 Lys Asn Leu Leu Ile Glu Glu Phe Gly Lys Asn Tyr Gly Thr Tyr Phe
 245 250 255
 Ser Ile Leu Ser Ala Ile Ser Gly Gly Tyr Asn Thr Gln Thr Glu Ile
 260 265 270
 Glu Ala Leu Leu Gly Glu Lys Ser Leu Gly Gly Tyr Leu Lys Arg Leu
 275 280 285
 Ile Glu Asp Tyr Asn Ile Val Val Arg Gln Arg Pro Val Phe Ser Lys
 290 295 300
 Glu Gly Ser Gln Thr Val Arg Tyr Gly Ile Cys Asp Asn Phe Ile His
 305 310 315 320
 Phe Trp Phe Asn Tyr Phe Asp Arg Asn Arg Ser Leu Ile Glu Ile Lys
 325 330 335
 Asn Phe Val Gly Leu Arg Lys Leu Ile Lys Ala Asp Tyr Pro Thr Tyr
 340 345 350
 Ser Gly Lys Ile Leu Glu Gln Tyr Phe Lys Gln Lys Tyr Ala Glu Ser
 355 360 365
 Tyr Glu Phe Arg Leu Ile Gly Ser Trp Trp Glu Pro Lys Gly Asn Gln
 370 375 380
 Asn Glu Ile Asp Ile Val Ala Ile Tyr Leu Asp Asn Lys Ser Ala Ile
 385 390 395 400
 Val Ala Glu Val Lys Arg Gln Lys Lys Asn Phe Lys Pro Glu Leu Phe
 405 410 415
 Gln Lys Lys Val Glu His Leu Glu Asn Lys Val Leu Ala Lys Tyr Gln
 420 425 430
 Ile Asn Thr Val Cys Leu Ser Leu Glu Asp Met
 435 440

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 <212> PRT
 <213> B.fragilis

<400> 6318
 Cys Pro Cys Ile Val Leu Ile Lys Gly Val Thr Gly Thr Val Ile Glu
 1 5 10 15
 Lys Thr Lys Ser Glu Pro Phe His Lys Ile Lys Gly Lys Val Lys Leu
 20 25 30
 Ser Phe Tyr Tyr Gln Ile Glu Cys Phe Tyr Leu Phe Thr Thr Tyr Ser
 35 40 45
 Tyr Leu Gly Lys Phe Gln Lys Arg Asn Ile Ile Thr Tyr Phe Phe Phe
 50 55 60
 Leu Asn Phe Ile Val Arg
 65 70

<210> 6319
 <211> 1100
 <212> PRT

<213> B.fragilis

<400> 6319

Thr	Ser	Leu	Leu	Leu	Thr	Gln	Lys	Ala	Ile	Leu	Met	Lys	Lys	Thr	Ile
1				5					10					15	
Phe	Leu	Ile	Leu	Cys	Ile	Leu	Cys	Ser	Leu	Gly	Ala	Met	Ala	Gln	Lys
			20					25					30		
Lys	Ser	Ile	Thr	Gly	Val	Val	Thr	Asp	Ala	Ser	Gly	Glu	Ser	Val	Ile
		35					40					45			
Gly	Ala	Ser	Val	Val	Glu	Val	Gly	Thr	Thr	Asn	Gly	Val	Ile	Thr	Asp
	50					55					60				
Ile	Asp	Gly	Lys	Phe	Thr	Leu	Ser	Val	Asp	Pro	Asn	Gly	Lys	Ile	Arg
65					70					75				80	
Val	Ser	Tyr	Ile	Gly	Tyr	Gln	Pro	Gln	Val	Leu	Asp	Val	Lys	Gly	Lys
			85						90					95	
Asn	Ser	Phe	Asn	Ile	Lys	Leu	Lys	Glu	Asp	Ser	Glu	Met	Leu	Glu	Glu
			100					105					110		
Val	Val	Val	Thr	Gly	Tyr	Gly	Gly	Lys	Gln	Leu	Arg	Thr	Lys	Val	Thr
		115				120						125			
Asn	Ser	Ile	Ala	Lys	Val	Lys	Asp	Glu	Ala	Leu	Lys	Val	Gly	Leu	Phe
	130					135					140				
Ser	Asn	Pro	Ala	Gln	Ala	Leu	Ser	Gly	Ala	Val	Ala	Gly	Leu	Lys	Val
145				150						155					160
Thr	Gln	Ala	Ser	Gly	Ser	Pro	Gly	Ala	Ala	Pro	Lys	Val	Thr	Leu	Arg
			165					170						175	
Gly	Gly	Thr	Asn	Phe	Asp	Gly	Ser	Gly	Asp	Pro	Leu	Val	Ile	Val	Asp
			180					185					190		
Gly	Gln	Leu	Arg	Asp	Gly	Met	Gln	Asp	Ile	Asn	Pro	Glu	Asp	Ile	Glu
		195				200						205			
Ser	Met	Glu	Val	Leu	Lys	Asp	Ala	Gly	Ala	Thr	Ala	Ile	Tyr	Gly	Ala
	210					215					220				
Arg	Ala	Ser	Asn	Gly	Val	Ile	Leu	Ile	Thr	Thr	Lys	Thr	Gly	Lys	Glu
225				230						235					240
Gly	Arg	Arg	Glu	Ile	Asn	Phe	Lys	Ala	Lys	Met	Gly	Leu	Ser	Tyr	Val
			245					250						255	
Asn	Asn	Pro	Tyr	Asp	Phe	Leu	Gly	Ala	Lys	Asp	Tyr	Ile	Asn	Val	Leu
		260						265					270		
Arg	Thr	Gly	Tyr	Ser	Lys	Ser	Gly	Phe	Thr	Thr	Ser	Asp	Gly	Glu	Tyr
	275						280					285			
Val	Ser	Ile	Ala	Pro	Leu	Gly	Asn	Leu	Thr	Ser	Ala	Ser	Pro	Phe	Gly
	290					295					300				
Thr	Gly	Asn	Thr	Leu	Asn	Asp	Lys	Thr	Ile	Trp	Asn	Ile	Met	Asn	Lys
305					310						315				320
Thr	Ala	Asp	Asn	Ala	Tyr	Leu	Leu	Gln	Lys	Gly	Trp	Gln	Glu	Met	Pro
			325					330						335	
Asp	Pro	Leu	Asp	Pro	Ser	Lys	Thr	Ile	Leu	Tyr	Lys	Asp	Thr	Asn	Pro
		340						345					350		
Ala	Asp	Tyr	Asn	Leu	Asn	Asn	Pro	Ala	Ile	Ser	Gln	Asp	Tyr	Asn	Ile
	355					360						365			
Asn	Met	Ser	Gly	Gly	Asn	Asp	Lys	Gly	Thr	Tyr	Tyr	Ala	Gly	Leu	Gly
	370					375					380				
Tyr	Asn	Arg	Gln	Glu	Gly	Leu	Pro	Ile	Lys	Thr	Phe	Tyr	Glu	Arg	Tyr
385				390						395					400
Ser	Phe	Val	Leu	Asn	Ala	Ser	Tyr	Lys	Ile	Thr	Asp	Trp	Leu	Thr	Ser
			405					410						415	
Ser	Ser	Asn	Phe	Asn	Tyr	Asn	Arg	Ala	Asn	Trp	Lys	Asn	Met	Pro	Gly
		420						425					430		
Ser	Gln	Thr	Ser	Glu	Gly	Asn	Tyr	Phe	Gly	Arg	Ile	Met	Ser	Thr	Pro
	435						440					445			

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Pro	Thr	Val	Arg	Phe	Gln	Asp	Glu	Asp	Gly	Asn	Pro	Thr	Leu	Gly	Pro
450						455					460				
Val	Ala	Gly	Asp	Gly	Asn	Gln	Asn	Tyr	Gln	Pro	Asp	Lys	Trp	Trp	Asn
465					470					475					480
Phe	Asn	Gln	Ser	Asp	Lys	Phe	Thr	Met	Val	Gln	Ala	Phe	Gln	Ile	Asp
				485					490						495
Ile	Leu	Lys	Asn	Leu	Ser	Val	Lys	Gly	Thr	Ala	Asn	Trp	Tyr	Tyr	Ser
			500					505					510		
Glu	Ser	Leu	Ala	Glu	Ser	Phe	Thr	Arg	Asp	Tyr	Glu	Asn	Thr	Pro	Gly
		515					520					525			
Gln	Phe	Val	Arg	Thr	Arg	Ser	Ser	Ser	Ala	Ser	Phe	Ser	Arg	Asp	Phe
		530				535					540				
Ser	Gln	Thr	Tyr	Asn	Val	Val	Leu	Asn	Tyr	Asn	Gln	Thr	Phe	Ala	Lys
545				550						555					560
Asp	His	Asn	Val	Ala	Val	Met	Leu	Gly	Met	Glu	Tyr	Phe	Asp	Arg	Tyr
				565					570						575
Ser	Arg	Ser	Phe	Ser	Ala	Ser	Gly	Ser	Gly	Ala	Pro	Thr	Asp	Asp	Phe
			580					585					590		
Ala	Asp	Leu	Ser	Leu	Thr	Asp	Asn	Gly	Glu	Gly	Lys	Arg	Ser	Ile	Asp
		595				600						605			
Ser	Gly	His	Ser	Asp	Tyr	Arg	Ile	Leu	Ser	Tyr	Phe	Gly	Arg	Leu	Asn
610						615									
Tyr	Asp	Tyr	Lys	Gly	Arg	Tyr	Leu	Leu	Ser	Ala	Val	Phe	Arg	Gln	Asp
625					630					635					640
Gly	Tyr	Ser	Ser	Leu	Gly	Asp	Asn	Arg	Trp	Gly	Phe	Phe	Pro	Gly	
				645				650						655	
Val	Ser	Ala	Gly	Trp	Ile	Phe	Gly	Gln	Glu	Asn	Phe	Val	Lys	Asn	Ala
			660					665					670		
Leu	Pro	Phe	Leu	Ser	Phe	Gly	Lys	Leu	Arg	Ala	Ser	Tyr	Gly	Val	Asn
		675					680						685		
Gly	Asn	Ala	Thr	Gly	Ile	Gly	Ala	Tyr	Asp	Leu	Gln	Gly	Ser	Tyr	Asn
		690				695					700				
Ser	Gln	Lys	Tyr	Asn	Gly	Asn	Val	Gly	Phe	Leu	Ile	Gly	Ala	Leu	Pro
705				710						715					720
Asn	Pro	Gly	Leu	Lys	Trp	Glu	Lys	Thr	Arg	Thr	Ala	Glu	Val	Gly	Ile
				725					730						735
Asp	Met	Ser	Phe	Glu	Asn	Arg	Leu	Asn	Ala	Asn	Phe	Thr	Tyr	Tyr	
			740				745						750		
Asn	Arg	Leu	Thr	Ser	Asp	Lys	Tyr	Ala	Asn	Leu	Ser	Leu	Pro	Ser	Thr
		755					760					765			
Thr	Gly	Phe	Ser	Ser	Ile	Lys	Asn	Asn	Asn	Gly	Lys	Phe	Arg	Asn	Ser
					775						780				
Gly	Val	Glu	Ile	Glu	Leu	Ser	Gly	Lys	Ile	Leu	Lys	Thr	Lys	Asp	Trp
785				790						795					800
Ser	Trp	Asp	Leu	Gly	Gly	Asn	Ile	Ser	Phe	Asn	Lys	Asn	Lys	Ile	Val
				805					810					815	
Ser	Leu	Pro	Asp	Asn	Gly	Leu	Ile	Arg	Asn	Gln	Gln	Asp	Ala	Ala	Gln
			820					825					830		
Ile	Tyr	Ser	Gly	Arg	Gln	Leu	Ser	Asp	Gly	Thr	Tyr	Glu	Lys	Ile	Trp
		835					840					845			
Val	Gly	Gly	Asn	Gln	Glu	Gly	Tyr	Glu	Pro	Gly	Val	Leu	Ile	Ala	Tyr
	850					855					860				
Lys	Ala	Asp	Gly	Leu	Tyr	Arg	Ser	Trp	Asp	Glu	Ile	Pro	Gly	Asp	Leu
865				870						875					880
Val	Val	Thr	Ser	Gly	Asn	Tyr	Phe	Gly	Lys	Lys	Met	Tyr	Gly	Pro	Glu
				885					890					895	
Ala	Trp	Lys	Lys	Leu	Ser	Ser	Ala	Glu	Gln	Lys	Asn	Ala	Leu	Pro	Ile
			900					905					910		
Gln	Pro	Gly	Asp	Val	Lys	Trp	Arg	Asp	Ile	Asn	Gly	Asp	Gly	Met	Ile

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915 920 925
 Asp Asn Tyr Asp Gln Val Val Val Gly Asn Thr Asn Pro His Trp Ile
 930 935 940
 Gly Gly Phe Asn Thr Thr Leu Arg Trp Lys Asn Phe Gln Leu Tyr Gly
 945 950 955 960
 Arg Phe Asp Phe Ala Phe Asp Tyr Trp Ile Tyr Asp Asn Thr Thr Pro
 965 970 975
 Trp Phe Leu Gly Cys Met Gln Gly Thr Tyr Asn Thr Thr Lys Asp Val
 980 985 990
 Phe Asn Thr Trp Ser Glu Glu Asn Pro Asn Ala Lys Tyr Pro Arg Phe
 995 1000 1005
 Val Tyr Ala Asp Gln Leu Met Asn Ala Asn Tyr Tyr Arg Thr Ser Thr
 1010 1015 1020
 Leu Phe Ala Tyr Lys Gly Asn Tyr Leu Ala Ile Arg Glu Ile Ser Leu
 1025 1030 1035 1040
 Ser Tyr Ser Leu Pro Lys Ala Trp Ala Asn Lys Ala Tyr Cys Gln Lys
 1045 1050 1055
 Val Asp Val Ser Ile Thr Gly Gln Asn Leu Gly Tyr Ile Thr Ser Ala
 1060 1065 1070
 Asn Val Ala Ser Pro Glu Val Ser Ser Ala Gly Ser Gly Tyr Ala Leu
 1075 1080 1085
 Pro Arg Thr Leu Leu Phe Gly Leu Asn Val Thr Phe
 1090 1095 1100

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 Gln Pro Met Gln Ile Val Leu Asp Arg Lys Lys Trp Gly Gly Leu Pro
 1 5 10 15
 Glu Lys Tyr Asn Gly Ile Ser Asp Ala Cys Ile Leu Thr Asp Glu Lys
 20 25 30
 Asn Gly Thr Ile Tyr Val Ala Gly Leu Trp Met Tyr Gly Val Leu Asp
 35 40 45
 Pro Arg Ser Gly Lys Trp Val Glu Gly Met Thr Gln Asp Ser Thr Arg
 50 55 60
 Trp Ile His Gln Trp His Ala Lys Gly Ser Gln Pro Gly Leu Gly Ala
 65 70 75 80
 Lys Glu Thr Cys Gln Phe Leu Ile Thr Lys Ser Val Asp Asp Gly Leu
 85 90 95
 Thr Trp Ser Asp Pro Val Asn Ile Thr Ala Gln Thr Lys Lys Pro Glu
 100 105 110
 Trp Trp Leu Tyr Ala Pro Ala Pro Gly His Gly Ile Thr Leu Lys Asp
 115 120 125
 Gly Thr Leu Ile Phe Pro Thr Gln Gly Arg Asp Lys Asp Gly Ile Pro
 130 135 140
 Phe Ser Asn Ile Thr Tyr Ser Lys Asp Gly Gly Lys Thr Trp Ile Ala
 145 150 155 160
 Ser Lys Pro Ala Tyr His Asn Thr Thr Glu Cys Met Ala Val Glu Leu
 165 170 175
 Gln Asp Gly Ser Val Met Leu Asn Met Arg Asp Asn Arg Asn His Gly
 180 185 190
 Asn Lys Lys Val Asn Gly Arg Arg Ile Cys Val Thr Ser Asp Leu Gly
 195 200 205
 Ser Thr Trp Thr Glu His Ser Thr Ser Arg Lys Ala Leu Ile Glu Pro
 210 215 220
 Thr Cys Met Ala Ser Ile His Arg His Thr Tyr Gln Glu Asn Gly Arg

225 230 235 240
 Gln Lys Thr Leu Leu Leu Phe Cys Asn Pro Glu Ser Tyr Asp Ser Arg
 245 250 255
 Asp His Met Thr Leu Lys Cys Ser Leu Asp Asp Gly Asn Thr Trp Asp
 260 265 270
 Ser Gly Arg Lys Ile Met Leu Asp Glu Leu Gly Ser Phe Gly Tyr Ser
 275 280 285
 Cys Ile Thr Ser Val Asn Asp Ser Thr Ile Gly Val Phe Tyr Glu Ser
 290 295 300
 Ser Gln Ala Gln Met Val Phe Gln Gln Ile Gln Leu Lys Glu Leu Ile
 305 310 315 320
 Gly Lys Gly Lys Ser Tyr Lys Glu Arg
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 Leu Glu Trp Ser Pro Leu Ser Phe His Asn Cys Asn Lys Leu Arg Met
 1 5 10 15
 Asn Phe Lys Glu Gly Glu Val Leu Tyr Phe Asn Lys Pro Leu Gly Trp
 20 25 30
 Thr Ser Phe Lys Val Val Gly His Ala Arg Tyr His Met Cys Arg Arg
 35 40 45
 Met Lys Val Lys Lys Leu Lys Val Gly His Ala Gly Thr Leu Asp Pro
 50 55 60
 Leu Ala Thr Gly Val Met Ile Val Cys Thr Gly Lys Ala Thr Lys Arg
 65 70 75 80
 Ile Glu Glu Phe Gln Tyr His Thr Lys Glu Tyr Val Ala Thr Ile Gln
 85 90 95
 Leu Gly Ala Thr Thr Pro Ser Tyr Asp Leu Glu His Glu Ile Asp Ala
 100 105 110
 Thr Tyr Pro Thr Glu His Ile Thr Arg Glu Leu Val Glu Lys Thr Leu
 115 120 125
 Lys Thr Phe Val Gly Glu Ile Gln Gln Ile Pro Pro Ala Phe Ser Ala
 130 135 140
 Cys Lys Val Asp Gly Ala Arg Ala Tyr Asp Leu Ala Arg Lys Gly Gln
 145 150 155 160
 Glu Val Glu Leu Lys Pro Lys Leu Leu Val Ile Asp Glu Ile Glu Leu
 165 170 175
 Leu Glu Cys Asn Leu Pro Glu Ile Lys Ile Arg Val Val Cys Ser Lys
 180 185 190
 Gly Thr Tyr Ile Arg Ala Leu Ala Arg Asp Ile Gly Glu Ala Leu Gln
 195 200 205
 Ser Gly Ala His Leu Thr Gly Leu Ile Arg Thr Arg Val Gly Asp Val
 210 215 220
 Lys Leu Glu Gln Cys Leu Asp Pro Ala Lys Phe Ala Glu Trp Ile Asp
 225 230 235 240
 Gln Gln Asp Val Glu Ile Ser Asp
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Val Ile Cys Pro Leu Phe Thr Val Tyr Cys Leu Pro Phe Val Ile Ile
 1 5 10 15
 Met Ala Asn Thr Leu Cys Lys Ala Glu Arg Leu Asn Ser Lys Ile Leu
 20 25 30
 Ile Glu Lys Met Phe Ala Gly Gly Ser Lys Ser Phe Ser Ile Phe Pro
 35 40 45
 Leu Arg Val Val Tyr Met Pro Val Glu Asn Gln Asp Val Gln Ala Ser
 50 55 60
 Ile Leu Leu Ser Val Ser Lys Lys Arg Phe Lys Arg Ala Val Lys Arg
 65 70 75 80
 Asn Arg Val Lys Arg Gln Leu Arg Glu Ala Tyr Arg Met His Lys His
 85 90 95
 Gln Leu Leu Gln Ile Leu Thr Asp Lys Gln Gln Gln Leu Ala Ile Ala
 100 105 110
 Phe Ile Tyr Leu Ser Asp Glu Leu Thr Ser Ser Ala Glu Ile Glu Glu
 115 120 125
 Lys Met Lys Ile Leu Leu Ala Arg Ile Ser Glu Lys Leu Val
 130 135 140

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<212> PRT

<213> B.fragilis

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Ile Asn Asn Thr Gly Ser Tyr Thr Lys Lys Phe Val Val Ile Ile Pro
 1 5 10 15
 Phe Pro Val Phe Lys Lys Arg Asn Glu Glu Thr Leu Asn Phe Trp Tyr
 20 25 30
 Asn Phe Leu Leu Ile Val Ser Arg Tyr Lys Asn Met Phe Asp Tyr Arg
 35 40 45
 Gln Asn Asp Ser Phe Pro Thr Tyr His Lys Pro Cys Ser Asn Val Leu
 50 55 60
 Leu Arg Gln Asn Thr Tyr Gly Ser Lys
 65 70

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<212> PRT

<213> B.fragilis

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Ile Glu Met Thr Lys Asn Lys Leu Leu Ser Cys Val Ile Gly Val Ile
 1 5 10 15
 Ile Leu Ser Leu Leu Val Gly Ala Tyr Phe Tyr Gln Arg Asn Lys Val
 20 25 30
 Ala Val His Gln Gln Ala Glu Arg Leu Phe Val Gln Met Leu Gln Glu
 35 40 45
 Glu Ile Glu Arg Lys Glu Arg Asn Leu Asn Leu Phe His Leu Phe Ser
 50 55 60
 Glu Ser Ser Ser Asp Thr Leu Pro Leu Lys Ile Cys Ile Ile Thr Glu
 65 70 75 80
 Glu Gly Lys Lys Glu Tyr Glu Val Asp Ser Leu Lys Ser Lys Lys Asn
 85 90 95
 Ile Ser Gln Asn Leu Arg Asn Arg Ser Ile His Ser Ile Leu Cys Glu
 100 105 110
 Lys Ser His Leu Leu Pro Asp Ser Leu Asn Glu His Trp Gln Ser Met
 115 120 125
 Leu Lys Lys Asp His Ile Asp Thr Glu Ser Thr Ile His Val Arg Met

130		135		140
Glu Asn Leu Gln Gly Lys	Ile Ile Ser Ser Ser Ser	His Asp Gly Val		
145		150		155
Trp Asp Thr Ser Ser Gly	Ile Ile Thr Ser Tyr Ile Gly Asn Arg Cys			160
		165		170
Glu Ile Glu Val Ile Gly	Leu Leu Ala Phe Ser Trp Lys Thr Ile Leu			175
		180		185
Trp Tyr His Trp Gln Pro Phe	Gly Trp Ile Val Ile Cys Leu Leu Leu			190
		195		200
Met Leu Leu Phe Ile Cys Phe	Tyr Tyr Lys Lys Val Asn Arg Pro Pro			205
		210		215
Glu Leu Lys Glu Val Pro Tyr	Glu Val Val Val Glu Lys Glu Val Val			220
225		230		235
Val Glu Lys Glu Val Ile Arg	Glu Ile Ile Val Glu Lys Glu Thr Ser			240
		245		250
Pro Glu Lys Lys Ala Pro Leu	Ile Lys Gln Ile Cys Lys Val Glu Gly			255
		260		265
Gln Leu Tyr Gly Leu Arg Tyr	Gly Val Val Phe Asp Ala Gln Asn Arg			270
		275		280
Val Leu Asn Cys Asn Gly Lys	Lys Met Ser Leu Ser Pro Gln Gln Cys			285
		290		295
Gln Ile Leu Lys Leu Phe Leu	Asp Ala Pro Asp Tyr Thr Val Thr Asp			300
305		310		315
Glu Asp Ile Ile Lys Phe Ile	Trp Lys Gly Gln Ser Asn Val Gln Ile			320
		325		330
Asn Thr Phe Cys Ser Ala Gly	Asn Lys Leu Gly Lys Arg Leu Glu Gln			335
		340		345
Ala Gly Cys Gly Val Cys Phe	Arg Arg Phe Gly Ser Asp Arg Tyr Arg			350
		355		360
Met Leu Phe Ile Asp Asp Leu	Val Asp Asn Asp Leu Thr			365
		370		375
				380

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Ile Phe Arg Thr Leu Lys	Ile Lys Lys Val Leu Val Ser Gln Pro Lys
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Pro Ala Ser Glu Lys Ser Pro Tyr Tyr	Asp Ile Ala Glu Lys Tyr Gly
	20 25 30
Val Lys Ile Asp Phe Arg Pro Phe Ile	Lys Val Glu Ser Val Ser Ala
	35 40 45
Lys Glu Phe Arg Gln Gln Lys Val Ser	Ile Leu Asp His Thr Ala Val
	50 55 60
Ile Phe Thr Ser Arg His Ala Ile Asp	His Phe Phe His Leu Cys Thr
65	70 75 80
Glu Leu Arg Val Thr Ile Pro Glu Thr	Met Lys Tyr Phe Cys Val Thr
	85 90 95
Glu Ala Val Ala Leu Tyr Ile Gln Lys	Tyr Val Gln Tyr Arg Lys Arg
	100 105 110
Lys Ile Phe Phe Gly Ala Thr Gly Lys	Ile Glu Asp Leu Ile Pro Ser
	115 120 125
Ile Val Lys His Lys Thr Glu Lys Tyr	Leu Val Pro Met Ser Asp Val
	130 135 140
His Asn Asp Asp Val Arg Asp Leu Leu	Asp Lys Asn Asn Ile Gln His
145	150 155 160
Thr Glu Cys Val Met Tyr Arg Thr Val	Ser Asn Asp Phe Met Glu Gly

[illegible]

<400> 6326

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Phe	Asp	Asp	Leu	Cys	Ile	Gln	Lys	Glu	Thr	Leu	Met	Lys	Ser	Lys	Ser
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Arg	Asn	Asn	Ala	Val	Ser	Tyr	Phe	Asp	Met	Gln	Phe	Ile	Thr	Ser	Ser
			20					25					30		
Ile	Ser	Thr	Thr	Leu	Val	Leu	Leu	Leu	Gly	Leu	Val	Val	Phe	Phe	
		35					40				45				
Val	Leu	Ala	Ala	Asn	Asn	Leu	Ser	Val	Tyr	Val	Arg	Glu	Asn	Ile	Asn
	50					55					60				
Phe	Ser	Val	Leu	Ile	Ser	Asp	Asp	Met	Lys	Glu	Thr	Asp	Ile	Leu	Lys
65					70					75				80	
Leu	Gln	Lys	Arg	Leu	Asn	Asn	Glu	Pro	Phe	Val	Lys	Glu	Thr	Glu	Tyr
			85						90					95	
Ile	Ser	Lys	Lys	Gln	Ala	Leu	Lys	Glu	Gln	Thr	Glu	Ala	Met	Gly	Thr
			100					105					110		
Asp	Pro	Gln	Glu	Phe	Leu	Gly	Tyr	Asn	Pro	Phe	Thr	Ala	Ser	Ile	Glu
		115					120					125			
Ile	Lys	Leu	His	Ser	Asp	Tyr	Ala	Asn	Ser	Asp	Ser	Ile	Ala	Lys	Ile
	130				135						140				
Glu	Lys	Leu	Ile	Lys	Arg	Asn	Thr	Asn	Ile	Gln	Asp	Val	Leu	Tyr	Gln
145					150					155					160
Lys	Asp	Leu	Ile	Asp	Ala	Val	Asn	Glu	Asn	Ile	Arg	Asn	Ile	Ser	Leu
			165					170						175	
Val	Leu	Leu	Ala	Leu	Ala	Val	Met	Leu	Thr	Phe	Ile	Ser	Phe	Ala	Leu
		180					185						190		
Ile	Asn	Asn	Thr	Ile	Arg	Leu	Ala	Ile	Tyr	Ser	Lys	Arg	Phe	Leu	Ile
	195						200					205			
His	Thr	Met	Lys	Leu	Val	Gly	Ala	Ser	Trp	Gly	Phe	Ile	Arg	Arg	Pro
	210					215					220				
Phe	Leu	Lys	Arg	Asn	Ile	Trp	Ser	Gly	Val	Leu	Ala	Ala	Phe	Ile	Ala
225					230					235					240
Asp	Thr	Ile	Leu	Met	Gly	Ala	Ala	Tyr	Trp	Leu	Val	Ser	Tyr	Glu	Pro
			245					250						255	
Glu	Leu	Ile	Arg	Val	Ile	Thr	Pro	Glu	Val	Met	Leu	Leu	Val	Ser	Gly
		260						265					270		
Ala	Val	Leu	Val	Phe	Gly	Val	Val	Ile	Thr	Phe	Leu	Cys	Ala	Tyr	Leu
	275					280						285			
Ser	Ile	Asn	Lys	Tyr	Leu	Arg	Met	Lys	Ala	Ser	Thr	Leu	Tyr	Tyr	Val
	290					295					300				

<210> 6328

<211> 76

<212> PRT

<213> B.fragilis

<400> 6328

Asn	Val	Tyr	Leu	Met	Lys	Met	Lys	Asn	Tyr	Leu	Lys	Val	Thr	Val	Phe
1				5					10					15	
Trp	Val	Ala	Val	Leu	Ser	Val	Trp	Cys	Leu	Lys	Pro	Thr	Lys	Lys	Ser
		20						25					30		
Gln	Asp	Thr	Leu	Leu	Leu	Gln	Asn	Val	Glu	Ala	Leu	Ala	Ser	Gly	Glu
		35					40					45			
Glu	Pro	Ser	Gln	Ile	His	Cys	Tyr	Trp	Arg	Gly	Ser	Val	Asp	Cys	Pro
	50					55					60				
Val	Ser	His	Asp	Lys	Val	Glu	Val	Val	Tyr	Glu	Tyr				
65					70					75					

<210> 6329

<211> 437
 <212> PRT
 <213> B.fragilis

<400> 6329

Phe	Ile	Ile	His	Asn	Phe	Ile	Met	Gly	Tyr	Leu	Phe	Thr	Ser	Glu	Ser
1				5					10					15	
Val	Ser	Glu	Gly	His	Pro	Asp	Lys	Val	Ala	Asp	Gln	Ile	Ser	Asp	Ala
			20					25					30		
Val	Leu	Asp	Lys	Leu	Leu	Ala	Tyr	Asp	Pro	Ser	Ser	Lys	Val	Ala	Cys
		35					40					45			
Glu	Thr	Leu	Val	Thr	Thr	Gly	Gln	Val	Val	Leu	Ala	Gly	Glu	Val	Lys
	50					55					60				
Thr	Gly	Ala	Tyr	Val	Asp	Leu	Gln	Leu	Ile	Ala	Arg	Glu	Val	Ile	Gln
65					70					75					80
Lys	Ile	Gly	Tyr	Thr	Lys	Gly	Glu	Tyr	Met	Phe	Glu	Ser	Asn	Ser	Cys
				85					90					95	
Gly	Val	Leu	Ser	Ala	Ile	His	Glu	Gln	Ser	Ala	Asp	Ile	Asn	Arg	Gly
			100					105					110		
Val	Glu	Arg	Glu	Asp	Pro	Met	Asn	Gln	Gly	Ala	Gly	Asp	Gln	Gly	Met
		115					120					125			
Met	Phe	Gly	Tyr	Ala	Thr	Asn	Glu	Thr	Glu	Asn	Tyr	Met	Pro	Leu	Ser
	130					135						140			
Leu	Asp	Leu	Ala	His	Arg	Ile	Leu	Leu	Val	Leu	Ala	Asp	Ile	Arg	Arg
145					150					155					160
Glu	Gly	Lys	Glu	Met	Thr	Tyr	Leu	Arg	Pro	Asp	Ala	Lys	Ser	Gln	Val
				165					170						175
Thr	Ile	Glu	Tyr	Asp	Asp	Asn	Gly	Thr	Pro	Val	Arg	Ile	Asp	Thr	Ile
			180					185					190		
Val	Val	Ser	Thr	Gln	His	Asp	Glu	Phe	Ile	Leu	Pro	Ala	Asp	Asp	Ser
		195					200					205			
Ala	Ala	Ala	Gln	Leu	Lys	Ala	Asp	Glu	Glu	Met	Leu	Ala	Val	Ile	Arg
	210					215					220				
Lys	Asp	Val	Ile	Glu	Val	Leu	Met	Pro	Arg	Val	Ile	Ala	Ser	Ile	Asn
225					230					235					240
His	Pro	Lys	Val	Leu	Ala	Leu	Phe	Asn	Asp	His	Ile	Ile	Tyr	His	Val
				245					250					255	
Asn	Pro	Thr	Gly	Lys	Phe	Val	Ile	Gly	Gly	Pro	His	Gly	Asp	Thr	Gly
			260					265					270		
Leu	Thr	Gly	Arg	Lys	Ile	Ile	Val	Asp	Thr	Tyr	Gly	Gly	Lys	Gly	Ala
		275					280					285			
His	Gly	Gly	Gly	Ala	Phe	Ser	Gly	Lys	Asp	Pro	Ser	Lys	Val	Asp	Arg
	290					295					300				
Ser	Ala	Ala	Tyr	Ala	Ala	Arg	His	Ile	Ala	Lys	Asn	Leu	Val	Ala	Ala
305					310					315					320
Gly	Val	Ala	Asp	Glu	Met	Leu	Val	Gln	Val	Ser	Tyr	Ala	Ile	Gly	Val
				325					330					335	
Ala	Arg	Pro	Ile	Asn	Ile	Tyr	Val	Asn	Thr	Tyr	Gly	Arg	Ser	Asn	Val
			340					345					350		
Lys	Met	Ser	Asp	Gly	Glu	Ile	Ala	Lys	Lys	Ile	Asp	Glu	Leu	Phe	Asp
		355					360					365			
Leu	Arg	Pro	Lys	Ala	Ile	Glu	Asp	Arg	Leu	Lys	Leu	Arg	Tyr	Pro	Ile
	370					375						380			
Tyr	Ser	Glu	Thr	Ala	Ala	Tyr	Gly	His	Met	Gly	Arg	Glu	Pro	Gln	Met
385					390					395					400
Val	Thr	Lys	His	Phe	Gln	Ser	Arg	Tyr	Glu	Gly	Asp	Arg	Thr	Met	Glu
				405					410					415	
Val	Glu	Leu	Phe	Thr	Trp	Glu	Lys	Leu	Asp	Tyr	Val	Asp	Lys	Val	Lys
			420					425					430		

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500

Ala Ala Phe Gly Leu
435

<210> 6330
<211> 439
<212> PRT
<213> B.fragilis

<400> 6330

Leu	Asn	Phe	Lys	Thr	Tyr	Tyr	His	Ser	Met	Asn	Phe	Val	Glu	Glu	Leu
1				5					10					15	
Arg	Trp	Arg	Gly	Met	Val	His	Asp	Met	Met	Pro	Gly	Thr	Glu	Glu	Leu
			20					25					30		
Leu	Ala	Lys	Glu	Gln	Val	Thr	Ala	Tyr	Val	Gly	Ile	Asp	Pro	Thr	Ala
		35					40					45			
Asp	Ser	Leu	His	Ile	Gly	His	Leu	Cys	Gly	Val	Met	Ile	Leu	Arg	His
	50					55					60				
Phe	Gln	Arg	Cys	Gly	His	Lys	Pro	Leu	Ala	Leu	Ile	Gly	Gly	Ala	Thr
65					70					75					80
Gly	Met	Ile	Gly	Asp	Pro	Ser	Gly	Lys	Ser	Ala	Glu	Arg	Asn	Leu	Leu
			85						90					95	
Asp	Glu	Glu	Thr	Leu	Arg	His	Asn	Gln	Ala	Cys	Ile	Lys	Lys	Gln	Leu
			100					105						110	
Ala	Lys	Phe	Leu	Asp	Phe	Glu	Ser	Asp	Ala	Pro	Asn	Arg	Ala	Glu	Leu
		115						120					125		
Val	Asn	Asn	Tyr	Asp	Trp	Met	Lys	Glu	Phe	Thr	Phe	Leu	Asp	Phe	Ala
	130					135					140				
Arg	Glu	Val	Gly	Lys	His	Ile	Thr	Val	Asn	Tyr	Met	Met	Ala	Lys	Glu
145					150					155					160
Ser	Val	Lys	Lys	Arg	Leu	Asn	Gly	Glu	Ala	Arg	Asp	Gly	Leu	Ser	Phe
			165						170					175	
Thr	Glu	Phe	Thr	Tyr	Gln	Leu	Leu	Gln	Gly	Tyr	Asp	Phe	Leu	His	Leu
			180					185					190		
Tyr	Glu	Thr	Lys	Gly	Cys	Lys	Leu	Gln	Met	Gly	Gly	Ser	Asp	Gln	Trp
		195					200						205		
Gly	Asn	Ile	Thr	Thr	Gly	Thr	Glu	Leu	Ile	Arg	Arg	Thr	Asn	Gly	Gly
	210					215					220				
Glu	Ala	Tyr	Ala	Leu	Thr	Cys	Pro	Leu	Ile	Thr	Lys	Ala	Asp	Gly	Gly
225					230					235					240
Lys	Phe	Gly	Lys	Thr	Glu	Ser	Gly	Asn	Ile	Trp	Leu	Asp	Pro	Arg	Tyr
			245						250					255	
Thr	Ser	Pro	Tyr	Lys	Phe	Tyr	Gln	Phe	Trp	Leu	Asn	Val	Ser	Asp	Ala
		260						265					270		
Asp	Ala	Glu	Arg	Tyr	Ile	Lys	Ile	Phe	Thr	Ser	Leu	Asp	Lys	Ala	Glu
	275						280						285		
Ile	Asp	Gly	Leu	Val	Ala	Glu	His	Asn	Glu	Ala	Pro	His	Leu	Arg	Val
	290					295					300				
Leu	Gln	Lys	Arg	Leu	Ala	Lys	Glu	Val	Thr	Val	Met	Val	His	Ser	Glu
305					310					315					320
Glu	Asp	Tyr	Asn	Ala	Ala	Val	Asp	Ala	Ser	Asn	Ile	Leu	Phe	Gly	Asn
			325						330					335	
Ala	Thr	Ser	Asp	Ala	Leu	Lys	Lys	Leu	Asp	Glu	Asp	Thr	Leu	Leu	Ala
		340						345					350		
Val	Phe	Glu	Gly	Val	Pro	Gln	Phe	Glu	Ile	Ser	Arg	Asp	Ala	Leu	Val
	355						360					365			
Glu	Gly	Val	Lys	Ala	Val	Asp	Leu	Phe	Val	Asp	Asn	Ala	Ala	Val	Phe
	370					375					380				
Ala	Ser	Lys	Gly	Glu	Met	Arg	Lys	Leu	Val	Gln	Gly	Gly	Gly	Val	Ser
385					390					395					400

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Leu Asn Lys Glu Lys Leu Ala Ala Phe Asp Gln Val Ile Thr Thr Ala
 405 410 415
 Asp Leu Leu Asp Glu Lys Tyr Leu Leu Val Gln Arg Gly Lys Lys Asn
 420 425 430
 Tyr Tyr Leu Ile Ile Ala Lys
 435

<210> 6331

<211> 298

<212> PRT

<213> B.fragilis

<400> 6331

Pro Leu Phe Asn Gln Ile Leu Phe Gln Met Lys Asn Leu Ile Leu Val
 1 5 10 15
 Leu Gly Cys Phe Phe Phe Leu Ile Ser Cys Gln Gln Thr Glu Lys Glu
 20 25 30
 Lys Leu Glu Glu Leu Val Lys Asn Trp Asn Gly Lys Glu Val Leu Phe
 35 40 45
 Pro Thr Asn Pro Ser Phe Thr Leu Tyr Gly Lys Thr Pro Val Asp Phe
 50 55 60
 Lys Ile Pro Val Ser Asp Tyr Lys Ile Val Thr Tyr Val Asp Ser Leu
 65 70 75 80
 Gly Cys Ser Ser Cys Lys Leu Gln Leu Pro Lys Trp Lys Glu Phe Met
 85 90 95
 Lys Tyr Ala Asp Ser Ile Val Gly Tyr Gln Ile Pro Val Leu Phe Phe
 100 105 110
 Leu His Pro Ala Asn Val Arg Glu Met Arg Ser Val Leu Lys Gln Asn
 115 120 125
 Arg Phe Asp Tyr Pro Val Cys Met Asp Thr Glu Asp Thr Phe Asn Lys
 130 135 140
 Val Asn Lys Phe Pro Ser Gln Leu Asn Phe Gln Thr Phe Leu Leu Asp
 145 150 155 160
 Lys Asn Asn His Val Ile Ala Ile Gly Asn Pro Val His Asn Tyr Asp
 165 170 175
 Val Arg Glu Leu Tyr Ile His Leu Ile Ser Gly Gly Ile Asp Gly Asp
 180 185 190
 Ser Leu Ser Asn Met Arg Thr Val Ile Lys Ile Glu Glu Asp Met Val
 195 200 205
 Asp Leu Gly Ser Phe Asp Trp Arg Arg Glu Gln His Ile Thr Phe Glu
 210 215 220
 Ile His Asn Ile Gly Asn Asn Asn Leu Val Val Tyr Asp Asn Lys Thr
 225 230 235 240
 Ser Cys Gly Cys Thr Ser Val Glu Tyr Ser Lys Glu Pro Val Gln Pro
 245 250 255
 Gly Lys Ser Leu Ala Val Lys Val Thr Tyr Lys Ala Asp His Pro Glu
 260 265 270
 His Phe Asn Lys Thr Ile Ile Leu Tyr Cys Asn Ala Ser Ala Ser Pro
 275 280 285
 Leu Glu Leu Lys Ile Thr Gly Asn Ala Lys
 290 295

<210> 6332

<211> 60

<212> PRT

<213> B.fragilis

<400> 6332

Tyr Phe Leu Asn Phe Gln Arg Pro Lys Asn Leu Leu Ser Lys His Tyr

1	5	10	15
Leu Ala Glu Ser Tyr Leu Asp Thr	Leu Ser Asp Lys Val Arg Phe Gln		
	20	25	30
Gly His Lys Ser Ile Lys Leu Lys Gly Lys Pro His Lys Tyr Tyr Arg			
	35	40	45
Lys Lys Ala Leu Thr Thr Cys Lys Thr Ser Ile Phe			
	50	55	60

<210> 6333
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 6333
Ile Met Ser Lys Lys Ile Phe Ala Ala Leu Ile Val Ala Val Val Ala
1 5 10 15
Thr Phe Ala Gly Tyr Asn Ile Tyr Gln Ser Gln Lys Thr Glu Lys Ile
20 25 30
Val Ser Asp Leu Val Ile Ala Asn Val Glu Ala Leu Ala Gly Asp Thr
35 40 45
Glu Gly Gly Ala Thr Ile Thr Cys Ser Arg Thr Cys Ser Asp Gly Val
50 55 60
Gly Arg Cys Tyr Lys Val Tyr Asp Lys Trp Gly Asn Cys His Phe Asp
65 70 75 80
Gly Ser Gln Thr Tyr Ser Cys Thr Cys
85

<210> 6334
 <211> 676
 <212> PRT
 <213> B.fragilis

<400> 6334
Leu Leu Ile Lys Gly Ser Val Met Leu Arg Gly Glu Lys Ser Tyr Met
1 5 10 15
Asn Met Lys Ile Met Lys Tyr Ile Gly Leu Gly Leu Leu Leu Val
20 25 30
Cys Ser Cys Gly Gly Arg Asp Arg Gln Val Glu Glu Ala Leu Ser Leu
35 40 45
Ser Gly Asn Asn Arg Asn Glu Leu Glu Ala Val Leu Lys His Tyr Glu
50 55 60
Gly Asp Gly Arg Lys Leu Glu Ala Ala Arg Phe Leu Ile Gly Asn Met
65 70 75 80
Pro Gly Ser Tyr Gly Ala Asn Pro Ile Val Glu Gln Asp Cys Ser Ala
85 90 95
Phe Tyr Glu Ala Tyr Asp Ser Leu Gly Gln Lys Tyr Asp Tyr Arg Val
100 105 110
Gly Thr Glu Trp Gly Lys Gln Val Asp Ser Leu Trp Lys Asp Phe Ser
115 120 125
Asn Arg His Arg Val Arg Gln Glu Leu Asn Tyr Asp Ile Thr Arg Met
130 135 140
Lys Ala Glu Asp Leu Ile Arg Glu Ile Asp Leu Ala Phe Arg Ala Trp
145 150 155 160
Val Glu Asn Val His Ser Arg Asn Cys Ser Phe Glu Asp Phe Cys Glu
165 170 175
Tyr Ile Leu Pro Tyr Arg Arg Gln Asn Gly Leu Leu Ile Asp Asn Ala
180 185 190
Arg Arg Glu Phe Asn Lys Arg His Gln Gly Lys Tyr Phe Val Lys Glu
195 200 205

Gly	Lys	Asp	Trp	Gln	Gln	Glu	Ile	Asp	Ser	Leu	Leu	Tyr	Glu	Tyr	Lys
210						215					220				
Tyr	Leu	Thr	His	Ser	Gly	Phe	Trp	Gly	Thr	Lys	Ile	Pro	Ile	Trp	Asn
225					230					235					240
Ala	Val	Thr	Leu	Glu	Lys	Met	Arg	His	Gly	Leu	Cys	Ala	Gln	Arg	Cys
				245					250					255	
Trp	Tyr	Asn	Ser	Leu	Leu	Leu	Ser	Ser	Leu	Gly	Ile	Pro	Val	Ala	Ile
		260					265						270		
Asp	Phe	Val	Pro	Ala	Trp	Gly	Asn	Arg	Asn	Asn	Ser	His	Thr	Trp	Asn
	275						280					285			
Val	Val	Leu	Ile	Asn	Gly	Glu	Ser	His	Ala	Phe	Glu	Ala	Phe	Trp	Asp
	290					295					300				
Asn	Asp	Arg	Trp	Lys	Tyr	Lys	Arg	Ile	Tyr	Asn	Asn	Arg	Asp	Asp	Asp
305				310						315					320
Glu	Leu	Trp	Gly	Arg	Phe	Arg	Leu	Pro	Lys	Val	Tyr	Arg	Tyr	Thr	Tyr
			325						330					335	
Ser	Asn	His	Ile	Glu	Gly	Pro	Leu	Ala	Asp	Val	Glu	Val	Asp	Lys	Ala
		340						345					350		
Asp	Ile	Pro	Glu	Leu	Phe	Arg	Ser	Val	Lys	Lys	Val	Asp	Val	Ser	Ser
	355						360					365			
Glu	Tyr	Phe	Glu	Thr	Ala	Asp	Val	Thr	Val	Glu	Leu	Thr	Gly	Glu	Ala
	370					375					380				
Pro	Gln	Gly	Val	Lys	Tyr	Ala	Tyr	Leu	Ala	Val	Phe	Gly	Tyr	Gln	Asp
385				390						395					400
Trp	His	Pro	Val	Gln	Trp	Ala	Lys	Ile	Glu	Asn	Gly	Arg	Ala	Val	Phe
			405						410					415	
Arg	Glu	Met	Gly	Lys	Asp	Met	Val	Tyr	Leu	Pro	Val	Tyr	Tyr	Lys	Arg
		420						425					430		
Gly	Gly	Leu	Leu	Pro	Ala	Ala	Glu	Pro	Phe	Arg	Leu	Arg	Asn	Asp	Gly
		435					440					445			
Thr	Met	Glu	Lys	Leu	Ser	Gly	Asn	Glu	Gly	Thr	Glu	Glu	Val	Ala	Val
	450					455					460				
Arg	Met	Val	Thr	Gly	Ala	Pro	Ala	Tyr	Asp	Gln	Asn	Arg	Glu	Tyr	Leu
465				470					475						480
Gly	Cys	Met	Lys	Gly	Ser	Arg	Ile	Val	Gly	Leu	Leu	Asp	Gly	Lys	Ser
		485							490					495	
Glu	Glu	Glu	Leu	Cys	Arg	Trp	Thr	Asp	Ser	Leu	Ala	Leu	Gln	Ser	Val
		500						505					510		
Val	Arg	Lys	Val	Ser	Ala	Arg	Leu	Pro	Tyr	Arg	Phe	Val	Arg	Leu	Leu
	515						520					525			
Leu	Pro	Ser	Asp	Ser	Ile	Ala	Leu	Gly	Glu	Leu	Ser	Phe	Tyr	Thr	Glu
	530					535					540				
Glu	Gly	Arg	Ile	Gly	Asn	Met	Arg	Ile	Ile	Thr	Pro	Met	Arg	Ala	Thr
545				550						555					560
Gly	Arg	Asn	Glu	Val	Pro	Gly	Met	Ile	Thr	Asp	Gly	Leu	Gly	Ala	Thr
		565							570					575	
Gly	Tyr	Arg	Gly	Arg	Val	Ala	Glu	Arg	Leu	Val	Asp	Ile	Asp	Leu	Gly
		580						585					590		
Lys	Glu	Tyr	Met	Val	Ser	His	Ile	Gly	Met	Thr	Ser	Tyr	Leu	Lys	Thr
	595					600						605			
Gln	Leu	Phe	Cys	Pro	Asp	Glu	Phe	Glu	Leu	Arg	Tyr	Trp	Asp	Asn	Gly
610				615						620					
Trp	Lys	Thr	Val	Glu	Arg	Lys	Gln	Ala	Asp	His	Lys	Gly	Tyr	Leu	Val
625				630					635						640
Phe	Glu	Arg	Val	Pro	Arg	Gly	Ala	Leu	Leu	Met	Leu	Lys	Asn	Cys	Arg
			645					650					655		
Trp	Lys	Gly	Lys	Thr	Ala	Glu	Arg	Ile	Phe	Thr	Tyr	Glu	Lys	Gly	Asp
		660					665					670			
Val	Lys	Trp	Glu												

210 215 220 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605 610 615 620 625 630 635 640 645 650 655 660 665 670

675

<210> 6335
 <211> 93
 <212> PRT
 <213> B.fragilis

<400> 6335
 Val Phe Lys Asn Ile Ile Ser Met Val Asn Phe Ser Leu Glu Gly Lys
 1 5 10 15
 Val Ala Trp Val Thr Gly Ala Ser Tyr Gly Ile Gly Phe Ala Leu Ala
 20 25 30
 Thr Ala Phe Ser Glu Ala Gly Ala Lys Ile Val Phe Asn Asp Ile Ser
 35 40 45
 Arg Glu Leu Val Asp Lys Gly Leu Ala Ala Tyr Lys Glu Leu Gly Ile
 50 55 60
 Glu Ala Arg Gly Tyr Val Cys Asp Val Thr Ser Glu Glu Gln Val Asn
 65 70 75 80
 Ala Leu Val Ala Gln Ile Leu Phe Thr Ala Gly Leu Gln
 85 90

<210> 6336
 <211> 268
 <212> PRT
 <213> B.fragilis

<400> 6336
 Asn Arg Met Glu Trp Phe Glu Ala Leu Ile Leu Gly Leu Ile Gln Gly
 1 5 10 15
 Leu Thr Glu Tyr Leu Pro Val Ser Ser Ser Gly His Leu Ala Ile Gly
 20 25 30
 Ser Ala Leu Phe Gly Ile Glu Gly Glu Glu Asn Leu Ala Phe Thr Ile
 35 40 45
 Val Val His Val Ala Thr Val Phe Ser Thr Leu Val Ile Leu Trp Lys
 50 55 60
 Glu Ile Asp Trp Ile Phe Arg Gly Leu Phe Lys Phe Glu Met Asn Ser
 65 70 75 80
 Glu Thr Arg Tyr Val Ile Asn Ile Leu Ile Ser Met Ile Pro Ile Gly
 85 90 95
 Ile Val Gly Val Phe Phe Lys Asp Glu Val Glu Ala Ile Phe Gly Ser
 100 105 110
 Gly Leu Leu Ile Val Gly Cys Met Leu Leu Leu Thr Ala Ala Leu Leu
 115 120 125
 Ser Phe Ser Tyr Tyr Ala Lys Pro Arg Gln Lys Glu Asn Ile Ser Met
 130 135 140
 Lys Asp Ala Phe Ile Ile Gly Leu Ala Gln Ala Cys Ala Val Leu Pro
 145 150 155 160
 Gly Leu Ser Arg Ser Gly Ser Thr Ile Ala Thr Gly Leu Leu Leu Gly
 165 170 175
 Asp Asn Lys Ala Lys Leu Ala Gln Phe Ser Phe Leu Met Val Met Pro
 180 185 190
 Pro Ile Leu Gly Glu Ala Leu Leu Asp Gly Met Lys Met Ile Lys Gly
 195 200 205
 Glu Ala Ile Ala Gly Asp Ile Pro Thr Leu Ser Leu Ile Val Gly Phe
 210 215 220
 Ile Ala Ala Phe Val Ser Gly Cys Leu Ala Cys Lys Trp Met Ile Asn
 225 230 235 240
 Ile Val Lys Lys Gly Lys Leu Ile Tyr Phe Ala Ile Tyr Cys Ala Ile
 245 250 255

Val Gly Val Val Thr Ile Val Val Ser Gln Leu Gln
260 265

<210> 6337
<211> 81
<212> PRT
<213> B.fragilis

<400> 6337
Ile Ile Phe Trp Ile Tyr Cys Tyr Phe Cys Phe Val Leu Thr Asp Tyr
1 5 10 15
Leu Met Lys Asn Lys Leu Lys Thr Ala Phe Thr Leu Leu Val Tyr Ile
20 25 30
Ala Val Thr Val Gly Ile Tyr Ala Leu Ile Cys His Leu Asn His Gln
35 40 45
Pro Phe Asp Asp Leu Arg Ile Leu Tyr Ala Val Leu Ile Gly Cys Val
50 55 60
Ala Tyr Leu Pro Arg His Leu Met Val Arg Lys Ser Arg Lys Ser Gln
65 70 75 80
Lys

<210> 6338
<211> 85
<212> PRT
<213> B.fragilis

<400> 6338
Gly Glu Cys Cys Gln Leu Ser Tyr Leu Ser Leu Ile Val Ala Val Val
1 5 10 15
Ala Thr Phe Ala Gly Tyr Asn Ile Tyr Gln Ser Gln Arg Val Glu Ser
20 25 30
Ile Met Ser Asp Leu Thr Met Ala Asn Val Glu Ala Leu Ala Gly Ser
35 40 45
Glu Ile Asn Asp Glu Asp Cys Val Ser Ala Ser Asn Arg Tyr Cys Ser
50 55 60
Val Leu Ile Val Thr Pro Asn Gly Asn Tyr Leu Glu Thr Tyr Phe Asp
65 70 75 80
Gln Lys Thr Lys Tyr
85

<210> 6339
<211> 527
<212> PRT
<213> B.fragilis

<400> 6339
Ser Met Lys Arg Arg Asp Phe Leu Lys Cys Ser Leu Ala Val Gly Ala
1 5 10 15
Gly Leu Ala Ala Ser Pro Ser Thr Tyr Ala Phe Asn Gly Glu Ser Lys
20 25 30
Glu Thr Gly Asn Asp Ser Ser Lys Leu Ser Lys Ala Pro Ala Thr Lys
35 40 45
Gly Gly Lys Pro His Ile Ile Phe Ile Met Ser Asp Gln His Arg Gly
50 55 60
Asp Ala Leu His Cys Met Gly Asn Lys Ala Val Ile Ser Pro Asn Ile
65 70 75 80
Asp Lys Leu Ala Gln Glu Gly Ser Leu Phe Val Cys Gly Tyr Ser Ser
85 90 95

Ala	Pro	Ser	Ser	Thr	Pro	Ala	Arg	Ala	Gly	Leu	Leu	Thr	Gly	Met	Ser
			100					105					110		
Pro	Trp	His	His	Gly	Met	Leu	Gly	Tyr	Gly	Lys	Val	Ala	Ser	Lys	Tyr
		115					120					125			
Lys	Tyr	Glu	Met	Pro	Gln	Met	Leu	Arg	Asp	Leu	Gly	Tyr	Tyr	Thr	Phe
	130					135					140				
Gly	Ile	Gly	Lys	Met	His	Trp	Phe	Pro	Gln	Lys	Ala	Leu	His	Gly	Phe
145					150					155					160
His	Ala	Thr	Leu	Val	Asp	Glu	Ser	Gly	Arg	Ser	Glu	Thr	Arg	Asp	Phe
				165					170					175	
Ile	Ser	Asp	Tyr	Arg	Glu	Trp	Phe	Gln	Leu	Gln	Ala	Pro	Gly	Lys	Asn
			180					185					190		
Pro	Asp	Leu	Thr	Gly	Ile	Gly	Trp	Asn	Asn	His	Asn	Ala	Gly	Thr	Tyr
	195						200					205			
Lys	Leu	Glu	Glu	Arg	Leu	His	Pro	Thr	Ala	Trp	Thr	Gly	Gln	Thr	Ala
	210					215					220				
Cys	Glu	Leu	Ile	Arg	Asn	Tyr	Asp	Ser	Asp	Gln	Pro	Leu	Phe	Leu	Lys
225					230					235					240
Val	Ser	Phe	Ala	Arg	Pro	His	Ser	Pro	Tyr	Asp	Pro	Pro	Lys	Arg	Tyr
			245						250					255	
Leu	Asp	Met	Tyr	Glu	Lys	Val	Asp	Ile	Pro	Val	Pro	Phe	Val	Gly	Asp
		260						265					270		
Trp	Cys	Gly	Lys	Tyr	Ala	Glu	Arg	Lys	Asp	Pro	Glu	Arg	Val	Ser	Lys
		275					280					285			
Asp	Ala	Ala	Phe	Ala	Asn	Leu	Gly	Glu	Glu	Tyr	Ala	Val	Asn	Ser	Arg
	290					295					300				
Arg	His	Tyr	Tyr	Ala	Asn	Val	Thr	Phe	Ile	Asp	Asp	Gln	Ile	Gly	Gln
305					310					315					320
Ile	Ile	Gln	Ile	Leu	Lys	Glu	Lys	Gly	Met	Tyr	Glu	Asn	Ala	Ile	Ile
			325					330						335	
Cys	Tyr	Thr	Ala	Asp	His	Gly	Asp	Met	Leu	Gly	Asp	His	Tyr	His	Trp
			340					345					350		
Arg	Lys	Thr	Tyr	Ala	Tyr	Glu	Gly	Ser	Ala	Lys	Ile	Pro	Tyr	Ile	Ile
		355					360					365			
Lys	Trp	Pro	Ser	Ala	Met	Thr	Thr	Gln	Ala	Ile	Arg	Gly	Lys	Arg	Ile
	370					375					380				
Glu	Gln	Pro	Val	Glu	Leu	Arg	Asp	Phe	Leu	Pro	Thr	Phe	Ile	Glu	Leu
385					390					395					400
Ala	Gly	Gly	Thr	Val	Pro	Asp	Asp	Met	Asp	Gly	Lys	Ser	Leu	Val	Ala
			405						410					415	
Leu	Ala	Ser	Gly	Asn	Lys	Asn	Gly	Trp	Arg	Lys	Tyr	Ile	Asp	Leu	Glu
			420					425					430		
His	Ala	Thr	Cys	Tyr	Ser	Ala	Asp	Asn	Tyr	Trp	Cys	Ala	Leu	Thr	Asp
		435					440					445			
Gly	Lys	Met	Lys	Tyr	Ile	Trp	Phe	Ile	His	Thr	Gly	Glu	Glu	Gln	Leu
	450					455					460				
Phe	Asp	Leu	Ser	Ser	Asp	Pro	Gly	Glu	Gln	Lys	Asn	Leu	Ser	Gly	Asn
465					470					475					480
Ser	Arg	Tyr	Ala	Asp	Arg	Leu	Val	Glu	Met	Arg	Lys	Ala	Met	Val	Asp
			485						490					495	
His	Leu	Gln	Glu	Arg	Gly	Thr	Glu	Phe	Val	Lys	Asp	Gly	Lys	Leu	Ala
		500						505					510		
Val	Arg	Asp	Gln	Thr	Leu	Leu	Tyr	Ser	Pro	Asn	Tyr	Pro	Lys	Asp	
		515					520					525			

<210> 6340

<211> 90

<212> PRT

<213> B.fragilis

<400> 6340

Asn	Asp	Arg	Ser	His	Thr	Leu	Gln	Arg	Leu	His	Lys	Tyr	Gly	Arg	Val
1				5					10					15	
Thr	Gln	His	Gln	Ala	Leu	Glu	Pro	Pro	Asp	Asn	Gln	Trp	Thr	Gly	Met
			20					25					30		
Gln	Ala	Lys	Ser	Gln	Lys	Asp	Ala	Phe	Val	His	Leu	Tyr	Ile	Tyr	Val
		35					40					45			
Asn	Thr	Leu	Leu	Arg	Lys	Ser	Asn	Tyr	Lys	Lys	Asp	Asn	Pro	Leu	
	50					55				60					
Thr	Trp	Trp	Lys	Val	Asp	Trp	Gln	Leu	Ser	Arg	Thr	Val	Asn	Asn	Ser
65					70					75					80
Pro	Gly	Tyr	Cys	Thr	Tyr	Gln	Arg	Ile	Leu						
				85					90						

<210> 6341

<211> 692

<212> PRT

<213> B.fragilis

<400> 6341

Arg	Pro	Cys	Gly	Ser	Phe	Gln	Pro	Arg	Gly	Glu	Asp	Gln	Val	Thr	Ala
1				5					10					15	
Phe	Asn	Thr	Gly	Trp	Gln	Phe	Lys	Lys	Gly	Pro	Phe	Ala	Thr	Asp	Pro
			20					25					30		
Met	Arg	Ala	Ala	Ser	Gln	Trp	Asp	Gly	Lys	Trp	Glu	Thr	Val	Glu	Ile
		35					40					45			
Pro	His	Thr	Trp	Asn	Ala	Met	Asp	Met	Gln	Val	Gln	Ser	Gly	Ser	Phe
	50					55					60				
Tyr	Glu	Gly	Ala	Gly	Tyr	Tyr	Arg	Lys	Thr	Gln	Phe	Phe	Pro	His	Asp
65					70					75					80
Leu	Glu	Gly	Lys	Arg	Val	Phe	Leu	Arg	Phe	Glu	Gly	Val	Gly	Ala	Cys
				85					90					95	
Ala	Glu	Val	Tyr	Val	Asn	Gly	Lys	Leu	Ala	Gly	Thr	His	Lys	Gly	Gly
			100					105					110		
Tyr	Ser	Ala	Phe	Ala	Cys	Glu	Ile	Gly	Thr	Ala	Leu	Lys	Leu	Gly	Ala
		115					120					125			
Glu	Asn	Glu	Ile	Ile	Val	Lys	Ala	Asp	Asn	Lys	Ala	Arg	Pro	Asp	Val
	130					135					140				
Ile	Pro	Val	Asn	Gln	Asn	Leu	Phe	Gly	Val	Tyr	Gly	Gly	Ile	Tyr	Arg
145				150						155					160
Pro	Val	Trp	Leu	Ile	Val	Thr	Glu	Gln	Asn	Asn	Ile	Thr	Val	Thr	Asp
			165						170					175	
Cys	Ala	Ser	Pro	Gly	Val	Tyr	Ile	Thr	Gln	Lys	Asp	Val	Ser	Lys	Lys
		180						185					190		
Ser	Ala	Asp	Ile	Thr	Val	Lys	Val	Lys	Leu	Asp	Asn	Ala	Gly	Leu	Gln
		195						200				205			
Pro	Ala	Ala	Val	Thr	Leu	Glu	Asn	Thr	Ile	Tyr	Thr	Gln	Glu	Gly	Arg
	210					215						220			
Lys	Val	Gly	Thr	His	Ser	Arg	Ser	Phe	Asp	Leu	Ser	Pro	Gln	Gly	Thr
225					230					235					240
Gln	Thr	Tyr	Leu	Ser	Thr	Phe	Lys	Leu	Lys	Asn	Pro	His	Leu	Trp	Gln
			245						250					255	
Gly	Arg	Lys	Asp	Pro	Tyr	Leu	Tyr	Lys	Val	Val	Cys	Arg	Leu	Met	Ala
		260						265					270		
Asp	Gly	Lys	Val	Ile	Asp	Glu	Val	Val	Gln	Pro	Leu	Gly	Val	Arg	Lys
		275					280					285			
Tyr	Glu	Ile	Val	Ala	Gly	Lys	Gly	Phe	Phe	Leu	Asn	Gly	Glu	Lys	Tyr
	290					295						300			

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Pro Met Tyr Gly Val Thr Arg His Gln Asp Trp Trp Gly Leu Gly Ser
 305 310 315 320
 Ala Leu Lys Asn Glu His His Asp Phe Asp Leu Ala Ala Ile Met Asp
 325 330 335
 Val Gly Ala Thr Thr Val Arg Phe Ala His Tyr Gln Gln Ser Asp Tyr
 340 345 350
 Leu Tyr Ser Arg Cys Asp Thr Leu Gly Leu Ile Ile Trp Ala Glu Ile
 355 360 365
 Pro Cys Val Asn Arg Val Thr Gly Tyr Glu Thr Glu Asn Ala Gln Ser
 370 375 380
 Gln Leu Arg Glu Leu Ile Arg Gln Ser Phe Asn His Pro Ser Ile Tyr
 385 390 395 400
 Val Trp Gly Leu His Asn Glu Val Tyr Gln Pro His Glu Tyr Thr Ala
 405 410 415
 Ala Leu Thr Arg Ser Leu His Asp Leu Ala Lys Thr Glu Asp Pro Asp
 420 425 430
 Arg Tyr Thr Val Ser Val Asn Gly Tyr Gly His Met Asp His Pro Val
 435 440 445
 Asn Leu Asn Ala Asp Ile Gln Gly Met Asn Arg Tyr Phe Gly Trp Tyr
 450 455 460
 Glu Lys Lys Ile Gln Asp Ile Lys Pro Trp Val Glu Gln Leu Glu Lys
 465 470 475 480
 Asp Tyr Pro Tyr Gln Lys Leu Met Leu Thr Glu Tyr Gly Ala Asp Ala
 485 490 495
 Asn Leu Ala His Gln Thr Glu Tyr Leu Gly Asp Ala Leu Asn Trp Gly
 500 505 510
 Lys Pro Phe Tyr Pro Glu Thr Phe Gln Thr Lys Thr His Glu Tyr Gln
 515 520 525
 Trp Ser Ile Ile Lys Asp His Pro Tyr Ile Ile Ala Ser Tyr Leu Trp
 530 535 540
 Asn Met Phe Asp Phe Ala Val Pro Met Trp Thr Arg Gly Gly Val Pro
 545 550 555 560
 Ala Arg Asn Met Lys Gly Leu Ile Thr Phe Asp Arg Lys Thr Lys Lys
 565 570 575
 Asp Ser Tyr Phe Trp Tyr Lys Ala Asn Trp Ser Glu Glu Pro Val Leu
 580 585 590
 Tyr Leu Thr Gln Arg Arg Asn Ala Asp Arg Glu Lys Arg Thr Thr Ala
 595 600 605
 Val Thr Val Tyr Ser Asn Ile Gly Ile Pro Lys Val Tyr Leu Asn Gly
 610 615 620
 Gln Glu Leu Ser Gly Ile Arg Asn Gly Tyr Thr Asp Val His Tyr Val
 625 630 635 640
 Phe Asp Asn Val Ser Leu Ala Asp Gly Lys Asn Ile Leu Lys Ala Val
 645 650 655
 Val Ser Thr Lys Gly Lys Glu Tyr Thr Asp Glu Ile Glu Trp Asn Tyr
 660 665 670
 Ser Gly Glu Lys Asn Arg Glu Ile Asp Ser Tyr Glu Asn Lys Asn Glu
 675 680 685
 His Ser Gly Phe
 690

<210> 6342

<211> 79

<212> PRT

<213> B.fragilis

<400> 6342

Ile Thr Met Gly Asp Lys Gln Lys Phe Ala Phe Asp Lys Thr Asn Phe
 1 5 10 15

Ile Leu Leu Ala Ile Gly Met Ala Val Val Ile Leu Gly Phe Ile Leu
 20 25 30
 Met Thr Gly Pro Ser Ser Ser Glu Thr Val Phe Gln Ala Asp Ile Phe
 35 40 45
 Ser Val Arg Arg Ile Lys Val Ala Pro Val Val Cys Phe Leu Gly Phe
 50 55 60
 Ile Phe Met Ile Tyr Gly Val Met Arg Lys Pro Lys Thr Lys Glu
 65 70 75

<210> 6343

<211> 67

<212> PRT

<213> B.fragilis

<400> 6343

Gly Val Thr Gly Leu Leu Asp Met Tyr Ile Phe Cys Phe Ser Asn Phe
 1 5 10 15
 Ser Leu Cys Arg Asp Gly Thr Asp Lys Arg Glu Glu Ala Leu Leu Phe
 20 25 30
 Ser Gly Asn Asn Arg Asp Glu Phe Glu Thr Val Leu Asn Ala Ile Tyr
 35 40 45
 Leu Gly Gly Ile Leu Glu Leu Val Asp Ser Tyr Lys Ser Ser Cys Leu
 50 55 60
 Arg Val Lys
 65

<210> 6344

<211> 354

<212> PRT

<213> B.fragilis

<400> 6344

Phe Ile Ile Met Asn Lys Ile Val Ser Phe Phe Ile Leu Ile Leu Val
 1 5 10 15
 Cys Ser Cys Ser Asp Arg Lys Glu His Ile Ala Asn Ile Leu Ser Met
 20 25 30
 Asn Ser Ile Asp Ile Lys Thr Asn Arg Ile Asn Lys Asp Glu Val Ile
 35 40 45
 Ala Arg Gly Ala Phe Pro Phe Glu Met Ile Asp Ser Leu Phe Phe Leu
 50 55 60
 Phe Asn Gly Asp Pro Ser Ser Gly Ala Leu Val Leu Cys Glu Ser Asn
 65 70 75 80
 Ala Ser Glu Leu Gly His Phe Leu Gln Lys Gly Asn Gly Phe Gly Glu
 85 90 95
 Cys Ile Thr Pro Gly Tyr Ile Gly His Cys Asn Asp Thr Ile Tyr Val
 100 105 110
 Ser Glu Arg Ser Arg Thr Arg Arg Met Thr Tyr Leu Leu Ser Asn His
 115 120 125
 Asn Asp Ser Leu Gln Tyr Lys Cys Leu Glu Asp Val Ser Pro Lys Met
 130 135 140
 Asn Ser Glu Phe Tyr Tyr Gln Ile Cys Arg Leu Gln Ser Gly Leu Phe
 145 150 155 160
 Val Gly Ala Arg Leu Phe Gly Lys Glu His Leu Phe Thr Leu Leu Asp
 165 170 175
 Glu Ser Leu Asp Thr Leu Thr Thr Phe Ala Arg Val Pro Ile Asp Ile
 180 185 190
 Glu Glu Asn Ala Asn Asn Lys Leu Ala Pro Phe Ile Gly His Leu Cys
 195 200 205
 Ile Asp Asp Asn Thr Val Tyr Tyr Ala Ser Asn Asp Phe Ser Tyr Met

210	215	220
Ala Ala Tyr Asp Ile Leu Ser Glu Lys Glu Ile Lys Pro Val Phe Glu		
225	230	235
Arg Met Tyr Ile Ser Pro Ile Ile Gln Lys Ser Ala Asn Gly Ile Ser		240
	245	250
Leu Asp Lys Tyr Lys His Leu Leu Gly Phe Gly Asp Ile Arg Val Tyr		255
	260	265
Gln Asn Tyr Ile Phe Ala Thr Tyr Ile Gly Lys Pro Asp Ile Thr Met		270
	275	280
Asp Gln Glu Asn Asp Ile Ser Ala Leu Val Pro Thr His Leu Leu Val		285
	290	295
Phe Asn Lys Asp Gly Val Pro Ile Val Lys Phe Lys Phe Pro Phe Lys		300
305	310	315
Ile Arg Ser Phe Val Phe Thr Lys Ser Lys Met Tyr Leu Leu Asp Val		320
	325	330
Asp Cys Asn Ile Glu Ser Val Asp Leu Val Glu Leu Trp Lys His Leu		335
	340	345
		350
Pro Asp		

<210> 6345

<211> 357

<212> PRT

<213> B.fragilis

<400> 6345

Thr His Ile Ile Ile Met Lys Leu Ser Gln Phe Lys Phe Lys Leu Pro		
1	5	10
Glu Glu Lys Ile Ala Leu His Pro Thr Lys Tyr Arg Asp Glu Ser Arg		15
	20	25
Leu Met Val Leu His Lys Arg Thr Gly Glu Ile Glu His Lys Met Phe		30
	35	40
Lys Asp Ile Leu Asn Tyr Phe Asp Asp Lys Asp Val Phe Val Phe Asn		45
	50	55
Asp Thr Lys Val Phe Pro Ala Arg Leu Tyr Gly Asn Lys Glu Lys Thr		60
65	70	75
Gly Ala Arg Ile Glu Val Phe Leu Leu Arg Glu Leu Asn Glu Glu Leu		80
	85	90
Arg Leu Trp Asp Val Leu Val Asp Pro Ala Arg Lys Ile Arg Ile Gly		95
	100	105
Asn Lys Leu Tyr Phe Gly Asp Asp Asp Ser Met Val Ala Glu Val Ile		110
	115	120
Asp Asn Thr Thr Ser Arg Gly Arg Thr Leu Arg Phe Leu Tyr Asp Gly		125
	130	135
Pro His Asp Glu Phe Lys Lys Ala Leu Tyr Ala Leu Gly Glu Thr Pro		140
145	150	155
Leu Pro His Thr Ile Leu Asn Arg Pro Val Glu Glu Glu Asp Ala Glu		160
	165	170
Arg Phe Gln Ser Ile Phe Ala Lys Asn Glu Gly Ala Val Thr Ala Pro		175
	180	185
Thr Ala Ser Leu His Phe Ser Arg Glu Leu Met Lys Arg Met Glu Ile		190
	195	200
Lys Gly Ile Asp Phe Ala Tyr Ile Thr Leu His Ala Gly Leu Gly Asn		205
	210	215
Phe Arg Asp Ile Asp Val Glu Asp Leu Thr Lys His Lys Met Asp Ser		220
225	230	235
Glu Gln Met Phe Val Thr Glu Glu Ala Val Lys Ile Val Asn Arg Ala		240
	245	250
Lys Asp Leu Gly Lys Asn Val Cys Ala Val Gly Thr Thr Val Met Arg		255

260	265	270
Ala Ile Glu Ser Thr Val Ser Thr Asp Gly His Leu Lys Glu Tyr Glu		
275	280	285
Gly Trp Thr Asn Lys Phe Ile Phe Pro Pro Tyr Asp Phe Thr Val Ala		
290	295	300
Asn Ala Met Val Ser Asn Phe His Met Pro Leu Ser Thr Leu Leu Met		
305	310	315
Ile Val Ala Ala Phe Gly Gly Tyr Asp Gln Val Met Asp Ala Tyr His		
325	330	335
Ile Ala Leu Lys Glu Gly Tyr Arg Phe Gly Thr Tyr Gly Asp Ala Met		
340	345	350
Leu Ile Leu Asp Lys		
355		

<210> 6346

<211> 283

<212> PRT

<213> B.fragilis

<400> 6346

Ile Arg Asn Met Lys Thr Asn Tyr Glu Ile Arg Tyr Ala Ala His Pro		
1	5	10
Glu Asp Ala Arg Ser Tyr Asp Thr Lys Arg Ile Arg Arg Asp Phe Leu		
20	25	30
Ile Glu Lys Val Phe Ser Ala Asp Glu Val Asn Met Val Tyr Ser Met		
35	40	45
Tyr Asp Arg Met Val Val Gly Gly Ala Met Pro Val Lys Glu Val Leu		
50	55	60
Lys Leu Glu Ala Ile Asp Pro Leu Lys Ala Pro Tyr Phe Leu Thr Arg		
65	70	75
Arg Glu Met Gly Ile Phe Asn Val Gly Gly Ser Gly Ile Val Arg Ala		
85	90	95
Gly Asp Ala Ile Phe Gln Leu Asp Tyr Lys Glu Ala Leu Tyr Leu Gly		
100	105	110
Ala Gly Asp Arg Asp Val Thr Phe Glu Ser Thr Asp Ala Ala His Pro		
115	120	125
Ala Lys Phe Tyr Phe Asn Ser Leu Ala Ala His Arg Asn Tyr Pro Asp		
130	135	140
Lys Lys Val Thr Lys Ala Asp Ala Val Val Ala Glu Met Gly Thr Leu		
145	150	155
Glu Gly Ser Asn His Arg Asn Ile Asn Lys Met Leu Val Asn Gln Val		
165	170	175
Leu Pro Thr Cys Gln Leu Gln Met Gly Met Thr Glu Leu Ala Pro Gly		
180	185	190
Ser Val Trp Asn Thr Met Pro Ala His Val His Ser Arg Arg Met Glu		
195	200	205
Ala Tyr Phe Tyr Phe Glu Val Pro Glu Glu His Ala Val Cys His Phe		
210	215	220
Met Gly Glu Val Asp Glu Thr Arg His Val Trp Met Lys Gly Asp Gln		
225	230	235
Ala Val Leu Ser Pro Glu Trp Ser Ile His Ser Ala Ala Ala Thr His		
245	250	255
Asn Tyr Thr Phe Ile Trp Gly Met Gly Glu Asn Leu Asp Tyr Gly		
260	265	270
Asp Gln Asp Phe Ser Leu Ile Thr Asp Leu Lys		
275	280	

<210> 6347

<211> 212

<212> PRT

<213> B.fragilis

<400> 6347

Ser Met Asp Ile Leu Asp Ile His Thr His Arg Met Pro Val Glu Leu
 1 5 10 15
 Gly Gln Ala Ile Gln Asn Cys Gln Pro Ala Glu Phe Asp Pro Leu Ala
 20 25 30
 Gly Ala Tyr Tyr Ser Val Gly Ile His Pro Trp Tyr Leu Thr Arg Glu
 35 40 45
 Asn Leu Asp Arg Gln Trp Glu Met Leu Leu Ala Ala Ile Gln Cys Pro
 50 55 60
 Gln Val Leu Ala Ile Gly Glu Ala Gly Leu Asp Lys Leu Val Arg Thr
 65 70 75 80
 Asp Tyr Met Leu Gln Gln Glu Val Phe Glu Lys Gln Ala Met Leu Ala
 85 90 95
 His Glu Met Lys Tyr Pro Leu Val Ile His Ala Val Arg Ser Ala Asn
 100 105 110
 Glu Ile Ile Cys Leu Arg Lys Lys Met Lys Pro Ser Asn Pro Trp Ile
 115 120 125
 Ile His Gly Phe Arg Gly Lys Lys Glu Leu Ala Leu Gln Tyr Ile Arg
 130 135 140
 Glu Gly Ile Tyr Val Ser Leu Gly Glu Lys Tyr Gln Glu Glu Val Leu
 145 150 155 160
 Trp Gly Ile Pro Leu Glu Tyr Leu Phe Leu Glu Thr Asp Glu Ser Met
 165 170 175
 Ile Asp Ile His Cys Leu Tyr Glu Arg Ala Ala Leu Leu Leu Glu Ile
 180 185 190
 Pro Leu Cys Lys Leu Met Gln Gln Val Arg Gln Asn Ile Asn Asn Val
 195 200 205
 Phe Phe Arg Gln
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<210> 6348

<211> 76

<212> PRT

<213> B.fragilis

<400> 6348

Glu Thr Gly Met Lys Gly Leu Leu Ser Tyr Ile Leu Leu Leu Pro Ile
 1 5 10 15
 Tyr Phe Tyr Arg Ala Cys Ile Ser Pro Met Thr Pro Pro Ser Cys Arg
 20 25 30
 Phe Thr Pro Thr Cys Ser Gln Tyr Ala Ile Glu Ala Ile Lys Lys His
 35 40 45
 Gly Pro Phe Lys Gly Leu Tyr Leu Ala Val Arg Arg Ile Leu Arg Cys
 50 55 60
 His Pro Trp Gly Gly Ser Gly Tyr Asp Pro Val Pro
 65 70 75

<210> 6349

<211> 201

<212> PRT

<213> B.fragilis

<400> 6349

Thr Lys Pro Met Gln Glu Met Asn Gln Ile Thr Ser Val Cys Val Tyr
 1 5 10 15
 Cys Ala Ser Ser Thr Lys Ile Asp Gln Thr Tyr Phe Asp Ala Ala Ile

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<211> 375
<212> PRT
<213> B.fragilis
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Thr	Asp	Phe	Leu	Val	Arg	Val	Leu	Arg	Val	Cys	Leu	Ile	Tyr	Phe	Lys
1				5					10					15	
Asn	Glu	Ile	Tyr	Val	Ser	Cys	Leu	Lys	Ile	Thr	Lys	Met	Lys	Gln	Lys
			20					25					30		
Tyr	Ile	Leu	Phe	Leu	Ser	Leu	Cys	Phe	Val	Leu	Phe	Ser	Cys	Arg	Lys
		35					40					45			
Asn	Asp	Val	Gly	Ser	Val	Tyr	Ser	Phe	Asp	Thr	Val	Cys	Lys	Ile	Val
	50					55					60				
Asp	Tyr	Asn	Leu	Ile	Cys	Ser	Asp	Glu	Asn	Ala	Pro	Trp	Gly	Ala	Ile
65					70					75				80	
Met	Asn	Met	Glu	Ile	Val	Asp	Ser	Ile	Leu	Ile	Leu	Gln	His	Ala	Met
			85						90					95	
Asp	Glu	Tyr	Ala	Phe	Ser	Phe	Ile	Asn	Val	Asn	Asn	Gly	Glu	Leu	Leu
			100					105					110		
Ser	Gln	Trp	Gly	Arg	Thr	Gly	Glu	Gly	Pro	Glu	Glu	Phe	Ile	Asp	Phe
		115					120					125			
Gly	Ser	Gly	Phe	Glu	Ile	Val	Asp	Ser	Arg	Ile	Val	Phe	Leu	Asp	Arg
	130					135					140				
Met	Lys	Lys	Glu	Arg	Ile	Ser	Val	Leu	Leu	Ser	Asp	Ile	Leu	Ser	Lys
145					150					155					160
Lys	Glu	His	Pro	Asp	Ile	Thr	Arg	Glu	Ala	Tyr	Pro	Tyr	Asn	Val	Asp
			165						170					175	
Phe	Arg	Val	Leu	Glu	Ile	Asn	Ala	Val	Gly	Asn	Lys	Lys	Ile	Val	Thr
			180					185					190		
Gly	Gly	Phe	Lys	Lys	Gly	Tyr	Trp	Gly	Ala	Leu	Asp	Ser	Gln	Asn	His
		195					200					205			
Ile	Ile	Pro	Asn	Val	Ala	Glu	Leu	Pro	Phe	Asp	Ala	Gly	Glu	Val	Ser
	210					215					220				
Gly	Leu	Glu	Lys	Gly	Ile	Val	Phe	Gly	Gly	Ile	Leu	Lys	Ala	Asn	Ser

225		230		235		240									
Lys	Gln	Ser	Lys	Phe	Val	Leu	Ser	Ile	Arg	Ala	Ser	Asp	Ile	Phe	Glu
				245					250					255	
Ile	Tyr	Arg	Val	Ser	Asp	Asp	Gly	Ile	Asn	Arg	Val	Tyr	Val	Ser	Pro
			260					265					270		
Phe	Lys	His	Ile	Pro	Lys	Thr	Trp	Lys	Lys	Gly	Gly	Gly	Tyr	Ala	Ile
		275					280					285			
Asp	Tyr	Asn	Gln	Ser	Ile	Gly	Gly	Ile	Lys	Asn	Ile	Ala	Val	Ser	Asp
	290					295					300				
Asp	Leu	Ile	Cys	Phe	Ser	Leu	Phe	Leu	Gln	Asn	Tyr	Asn	Glu	Ala	Ala
305					310					315					320
Lys	Thr	Asp	Phe	Ala	Ser	Asn	Glu	Leu	Phe	Cys	Phe	Asp	Trp	Asp	Gly
				325					330					335	
Asn	Lys	Val	Lys	Lys	Tyr	Val	Leu	Pro	Phe	Pro	Ile	Gly	Asn	Phe	Cys
			340					345					350		
Ile	Asp	Gly	Thr	His	Ile	Tyr	Gly	Val	Arg	Asn	Phe	Glu	Asp	Lys	Ile
		355					360					365			
Ile	Ile	Tyr	Arg	Phe	Asn	Met									
	370					375									

<210> 6351

<211> 1098

<212> PRT

<213> B.fragilis

<400> 6351

Ser	Lys	Gln	Ile	Asn	Ser	Val	Ser	Met	Arg	Lys	Leu	Phe	Val	Cys	Ile
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Ala	Leu	Gly	Leu	Thr	Thr	Leu	Thr	Gly	Asn	Ala	Thr	Ser	Pro	Leu	Trp
			20					25					30		
Met	Arg	Asp	Val	Gln	Ile	Ser	Pro	Asp	Gly	Thr	Glu	Ile	Ala	Phe	Cys
		35					40					45			
Tyr	Lys	Gly	Asp	Ile	Tyr	Lys	Val	Ser	Ala	Gly	Gly	Gly	Thr	Ala	Ile
	50					55					60				
Gln	Leu	Thr	Thr	Gln	Pro	Ser	Tyr	Glu	Cys	Thr	Pro	Ile	Trp	Ser	Pro
65					70					75					80
Asp	Ser	Lys	Gln	Ile	Ala	Phe	Ala	Ser	Asp	Arg	Asn	Gly	Asn	Phe	Asp
			85						90					95	
Ile	Phe	Val	Met	Pro	Ala	Thr	Gly	Gly	Thr	Ala	Gln	Arg	Leu	Thr	Thr
		100						105					110		
His	Ser	Ser	Ser	Glu	Leu	Pro	Ser	Ala	Phe	Thr	Pro	Asp	Gly	Lys	Tyr
		115					120					125			
Ile	Leu	Phe	Ser	Ala	Ser	Ile	Gln	Asp	Pro	Ser	Gln	Ser	Ala	Leu	Phe
	130					135					140				
Pro	Thr	Thr	Ala	Met	Thr	Glu	Leu	Tyr	Lys	Val	Pro	Val	Asn	Gly	Gly
145					150					155					160
Arg	Thr	Glu	Gln	Val	Leu	Gly	Thr	Pro	Ala	Glu	Ala	Ile	Cys	Tyr	Ala
			165						170					175	
Pro	Ser	Gly	Glu	Phe	Phe	Leu	Tyr	Gln	Asp	Arg	Lys	Gly	Phe	Glu	Asp
		180						185					190		
Glu	Trp	Arg	Lys	His	His	Thr	Ser	Ser	Ile	Thr	Arg	Asp	Ile	Trp	Leu
	195						200					205			
Tyr	Asp	Thr	Lys	Thr	Gly	Lys	His	Thr	Asn	Leu	Thr	Asn	His	Ala	Gly
	210					215						220			
Glu	Asp	Arg	Asn	Pro	Val	Leu	Ser	Pro	Asp	Gly	Lys	Ser	Val	Tyr	Leu
225					230					235					240
Leu	Ser	Glu	Arg	Lys	Gly	Ser	Phe	Asn	Val	Tyr	Ser	Phe	Pro	Leu	Asp
				245					250					255	
Asn	Ala	Gln	Asp	Leu	Lys	Ala	Val	Thr	Ser	Phe	Lys	Thr	His	Pro	Val

	260		265		270										
Arg	Phe	Leu	Ser	Met	Ser	His	Gly	Gly	Thr	Leu	Cys	Tyr	Ala	Tyr	Asp
	275						280					285			
Gly	Glu	Ile	Tyr	Thr	Gln	Lys	Asp	Asn	Ala	Thr	Pro	Gln	Lys	Ile	Asn
	290					295					300				
Ile	Asp	Ile	Val	Arg	Asp	Asp	Gln	Asp	Lys	Ile	Ala	Asp	Leu	Thr	Phe
305					310					315					320
Thr	Asn	Gly	Ala	Thr	Ser	Gly	Thr	Val	Ser	Pro	Asp	Gly	Lys	Gln	Ile
			325						330					335	
Ala	Phe	Ile	Val	Arg	Gly	Glu	Val	Phe	Val	Thr	Ser	Thr	Asp	Tyr	Ala
			340					345					350		
Thr	Thr	Lys	Gln	Ile	Thr	His	Thr	Pro	Ala	Arg	Glu	Ala	Gly	Leu	Thr
		355					360					365			
Phe	Ala	Pro	Asp	Asn	Arg	Thr	Leu	Ala	Tyr	Ala	Ser	Glu	Arg	Asn	Gly
	370					375				380					
Asn	Trp	Gln	Leu	Phe	Leu	Ala	Lys	Ile	Ala	Arg	Lys	Glu	Glu	Ala	Asn
385					390					395					400
Phe	Pro	Asn	Ala	Thr	Ile	Ile	Glu	Glu	Glu	Val	Leu	Leu	Pro	Ser	Ala
			405					410						415	
Thr	Val	Glu	Arg	Ala	Tyr	Pro	Gln	Phe	Ser	Pro	Asp	Gly	Lys	Glu	Leu
		420						425					430		
Ala	Phe	Ile	Glu	Glu	Arg	Asn	Arg	Leu	Met	Val	Ile	Asn	Leu	Asp	Thr
	435						440					445			
Lys	Lys	Val	Arg	Gln	Ile	Thr	Asp	Gly	Ser	Thr	Trp	Phe	Ser	Thr	Asp
	450					455					460				
Gly	Asn	Phe	Asp	Tyr	Gln	Trp	Ser	Pro	Asp	Gly	Lys	Trp	Phe	Thr	Leu
465					470					475					480
Glu	Phe	Ile	Gly	Asn	Arg	His	Asp	Pro	Tyr	Ser	Asp	Ile	Gly	Leu	Val
			485					490						495	
Ser	Ala	Lys	Gly	Asp	Ser	Pro	Ile	Thr	Asn	Leu	Thr	Asn	Ser	Gly	Tyr
			500					505					510		
Met	Ser	Gly	Ser	Pro	Arg	Trp	Val	Leu	Asp	Gly	Asn	Ala	Ile	Leu	Phe
	515						520					525			
Thr	Thr	Glu	Arg	Tyr	Gly	Met	Arg	Ala	His	Ala	Ser	Trp	Gly	Ser	Gln
	530					535					540				
Asn	Asp	Ala	Met	Leu	Val	Phe	Leu	Asn	Gln	Asp	Ala	Phe	Asp	Lys	Phe
545					550					555					560
Arg	Leu	Ser	Lys	Glu	Asp	Tyr	Glu	Leu	Gln	Lys	Glu	Leu	Glu	Lys	Glu
			565						570					575	
Gln	Gln	Lys	Asp	Lys	Glu	Lys	Ala	Ser	Ile	Asp	Pro	Lys	Lys	Asp	Lys
		580						585					590		
Lys	Lys	Asp	Pro	Gln	Thr	Asp	Thr	Glu	Lys	Lys	Asp	Glu	Ile	Lys	Asn
		595					600					605			
Ile	Leu	Val	Glu	Leu	Asn	Gly	Leu	Glu	Asp	Arg	Ile	Ile	Arg	Leu	Thr
	610					615				620					
Pro	Asn	Ser	Ser	Asn	Leu	Gly	Ser	Thr	Ile	Ile	Ser	Lys	Asp	Gly	Glu
625					630					635					640
Thr	Leu	Tyr	Tyr	Leu	Ser	Ala	Phe	Glu	Gly	Gly	Phe	Asp	Leu	Trp	Lys
			645					650						655	
Met	Asp	Leu	Arg	Lys	Lys	Glu	Thr	Lys	Leu	Leu	His	Lys	Met	Asn	Ala
		660						665					670		
Gly	Trp	Ala	Ser	Met	Asp	Met	Asp	Lys	Asp	Gly	Lys	Ser	Leu	Phe	Val
	675						680					685			
Leu	Gly	Gly	Asn	Ala	Met	Gln	Lys	Met	Asp	Leu	Ser	Gly	Glu	Thr	Leu
	690					695				700					
Lys	Pro	Ile	Asn	Tyr	Lys	Ala	Glu	Met	Lys	Met	Asp	Leu	Ala	Ala	Glu
705					710					715					720
Arg	Glu	Tyr	Met	Phe	Asp	His	Val	Tyr	Lys	Gln	Gln	Gln	Lys	Arg	Phe
			725						730					735	

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Tyr Asn Thr Asn Met His Gly Val Asn Trp Asp Thr Met Ser Ala Ala
 740 745 750
 Tyr Arg Lys Phe Leu Pro His Ile Asn Asn Asn Tyr Asp Phe Ala Glu
 755 760 765
 Leu Leu Ser Glu Trp Leu Gly Glu Leu Asn Val Ser His Thr Gly Gly
 770 775 780
 Arg Phe Ser Pro Ser Ile Pro Gly Asp Ala Thr Ala Ser Leu Gly Val
 785 790 795 800
 Leu Thr Asp Trp Asn Tyr Lys Gly Lys Gly Ala Ser Ile Met Glu Val
 805 810 815
 Ile Glu Lys Gly Pro Phe Asp His Ala Arg Ser Lys Val Lys Ala Gly
 820 825 830
 Thr Ile Ile Glu Lys Ile Asn Gly Gln Glu Ile Thr Pro Glu Thr Asp
 835 840 845
 Tyr His Thr Leu Leu Asn Asp Lys Ala Asn Lys Lys Thr Leu Val Ser
 850 855 860
 Leu Tyr Asn Pro Gln Ser Gly Glu Arg Trp Glu Glu Val Val Ile Pro
 865 870 875 880
 Ile Gly Asn Gly Ile Leu Asn Asn Leu Leu Tyr Lys Arg Trp Val Lys
 885 890 895
 Gln Arg Ala Ala Asp Val Asp Lys Trp Ser Asp Gly Arg Leu Gly Tyr
 900 905 910
 Val His Ile Gln Ser Met Gly Asp Asp Ser Phe Arg Ser Val Tyr Ser
 915 920 925
 Asp Ile Leu Gly Lys Tyr Asn Asn Arg Glu Gly Ile Val Ile Asp Thr
 930 935 940
 Arg Phe Asn Gly Gly Gly Arg Leu His Glu Asp Ile Glu Val Leu Phe
 945 950 955 960
 Ser Gly Lys Lys Tyr Phe Thr Gln Val Val Arg Gly Arg Glu Ala Cys
 965 970 975
 Asp Met Pro Ser Arg Arg Trp Asn Lys Pro Ser Ile Met Leu Thr Cys
 980 985 990
 Glu Ala Asn Tyr Ser Asn Ala His Gly Thr Pro Trp Val Tyr Ser His
 995 1000 1005
 Gln Lys Leu Gly Lys Leu Val Gly Met Pro Val Pro Gly Thr Met Thr
 1010 1015 1020
 Ser Val Ser Trp Glu Arg Leu Gln Asp Pro Ser Leu Val Phe Gly Ile
 1025 1030 1035 1040
 Pro Val Ile Gly Tyr Arg Leu Pro Asp Gly Ser Tyr Leu Glu Asn Thr
 1045 1050 1055
 Gln Leu Glu Pro Asp Ile Lys Val Ala Asn Ser Pro Glu Thr Ile Val
 1060 1065 1070
 Lys Gly Glu Asp Thr Gln Leu Lys Thr Ala Val Glu Glu Leu Leu Lys
 1075 1080 1085
 Glu Leu Pro Ala Gly Lys Gly Lys Lys His
 1090 1095

<210> 6352

<211> 590

<212> PRT

<213> B.fragilis

<400> 6352

Glu His Lys Ile Lys Ile Tyr Leu Ala Ile Ile Met Lys Ser Ile Leu
 1 5 10 15
 Thr Phe Leu Leu Ile Ile Leu Met Asp Ile Gln Phe Asn Tyr Ala Cys
 20 25 30
 Pro Cys Ser Pro Thr Asn Thr Leu Ile Glu Met Asn Glu Ser Phe Ala
 35 40 45

Ser Gln Phe Gln Thr Ala Thr Ile Ile Pro Met Phe Leu Trp Gln Pro
 50 55 60
 Ser Trp Ser Tyr Pro Ile Glu Gly Leu Ala Ile Gly Leu Leu Ile Ser
 65 70 75 80
 Leu Ile Val Tyr Tyr Arg Met Val Tyr Ser Thr Lys Leu Phe Pro His
 85 90 95
 Glu Lys Leu Arg Leu Ile Leu Asn Ile Thr His Lys Thr Gln Thr Pro
 100 105 110
 Leu Thr Leu Ile His His Leu Leu Glu Glu Ile Ile Ser Asp Ser Leu
 115 120 125
 Ser Glu Ser Thr Ser Gln Lys Val Lys Arg Ile Leu Arg Tyr Thr Ser
 130 135 140
 His Ile Met Ser Cys Tyr Gln Asn Ile Ala Val Phe Asp Asp Lys Glu
 145 150 155 160
 Asn Glu Leu His Pro Gly Ser Ser Pro Ile Glu Phe Glu Leu Tyr Thr
 165 170 175
 Phe Ile Thr Ser Ile Val Asn Gln Cys Arg Ala Tyr Ala Asp Thr Arg
 180 185 190
 Gln Ile Lys Leu Asn Ile Asn Lys Asp Phe Ser Tyr Ile Ser Cys Arg
 195 200 205
 Val Asp Glu Ile Thr Met Thr Ala Ala Leu Gln Cys Leu Leu Asn Lys
 210 215 220
 Met Ile Glu Ala Thr Pro Cys Lys Gly Cys Ile Asn Met Asp Val Ser
 225 230 235 240
 His Ser Ile Lys His Trp Asn Leu Gln Ile Thr Asn Gly Pro Glu Cys
 245 250 255
 Arg Gln Ser His Lys Lys Met Leu Ser Phe Ile Ser Thr Phe Met Leu
 260 265 270
 Ile His Tyr Cys Gly Ser Leu Gln Ile Ile Lys Lys Ile Ile Arg Leu
 275 280 285
 His Gly Gly Lys Leu Ile Gly Ser Tyr His Gly Arg Ser Ile Thr Leu
 290 295 300
 Arg Val Thr Val Pro Ile Asn Gly Tyr Cys Asn Thr Ile Gln Cys Pro
 305 310 315 320
 Glu Val Val Pro Pro Val Met Lys Asp Asp Lys Ile Ile Arg Pro Asp
 325 330 335
 Lys Lys Gln His Lys Ile Leu Leu Val Met Ala Asp Thr Glu Leu Ser
 340 345 350
 Asn Tyr Leu His Lys Ala Phe Ser Ile Leu Phe Arg Ile Thr Ile Leu
 355 360 365
 Glu Asn Pro Glu Gln Ile Leu His Phe Ser Gly Asp Arg Leu Pro Asp
 370 375 380
 Ile Ile Val Ile Asp Glu Thr Val Asn Gly Ile Arg Gly Lys Glu Ile
 385 390 395 400
 Cys Ser Lys Ile Lys Ser Asn Thr Ser Met Val His Ile Pro Val Ile
 405 410 415
 Leu Leu Ile Ser Asn Asn Asp Asn Gly Ser Tyr Leu Ala His Ala Asp
 420 425 430
 Cys Gly Val Asp Lys Leu Glu Pro Arg Ala Ile Asn Ile Cys Arg Leu
 435 440 445
 Lys Met Asp Ile Gln Ile Leu Ile Asn Lys His Glu Arg Ile Met Lys
 450 455 460
 Leu Leu Glu Lys Asn Leu Ser Asp Asn Leu Pro Ser Pro Thr Ala Lys
 465 470 475 480
 Ser Glu Glu Asp Ala Leu Phe Ile Asn Lys Val Asn Lys Leu Leu Glu
 485 490 495
 Lys Asn Leu Ser Thr Glu Ser Tyr Thr Val Asp Met Leu Ser Ala Asp
 500 505 510
 Met Gly Met Cys Arg Thr Lys Phe Tyr Thr Lys Ile Lys Glu Ile Thr

515	520	525
Asp Lys Thr Pro Thr Glu Tyr Met His Tyr Phe Lys Met Asn Lys Ala		
530	535	540
Lys Ile Leu Leu Val Thr Gln Gln Tyr Thr Val Thr Glu Ile Ala Thr		
545	550	555
Phe Leu Gly Phe Cys Asn Ala Lys Tyr Phe Gly Lys Arg Phe Lys Lys		
	565	570
Phe Tyr Lys Val Pro Pro Thr Gln Tyr Ile Lys Glu Val Phe		
580	585	590

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 <213> B.fragilis

<400> 6353

Cys Asn Lys Ile Met Lys Asn Ile Leu Leu Thr Leu Leu Leu Phe Ile	
1 5 10 15	
Leu Phe Ser Cys Arg Ser Thr Gly Asp Lys Thr Asp Cys Glu Val Leu	
20 25 30	
His Val Asp Leu Val Glu Arg Pro Val Pro Thr Glu Glu Leu Phe Ser	
35 40 45	
Lys Ile Ser Val Ile Pro Leu Glu Thr Asn Asp Ser Ser Phe Leu Val	
50 55 60	
Arg Pro Val Lys Val Ile Ile Lys Asp Asn Arg Tyr Tyr Ile Val Asp	
65 70 75 80	
Glu Gly Val Pro Ala Val Phe Ser Phe Asp Glu Glu Gly His Leu Leu	
85 90 95	
His Lys Ile Gly Lys Lys Gly Gln Gly Pro Gly Glu Tyr Arg Glu Ile	
100 105 110	
Tyr Asp Ala Val Ile Lys Glu Lys Glu Asn Thr Val Tyr Met Leu Ser	
115 120 125	
Pro Phe Gly Ser Leu Tyr Val Tyr Ser Leu Asp Gly Lys Phe Ile Lys	
130 135 140	
Glu Ile Lys Leu Pro Thr Arg Ser Asn Tyr Gln Leu Ile Glu Glu Leu	
145 150 155 160	
Asp Ser Lys Tyr Phe Val Thr Trp Thr Leu Pro Ala Ser Glu Asn Glu	
165 170 175	
Asn Cys Ile Ser Val Ile Ser Lys Glu Ser Phe Asn Asn Val Lys Glu	
180 185 190	
Phe Trp His Val Pro Pro Val Leu Thr Thr Leu Asn Ser Lys Pro Phe	
195 200 205	
Tyr Asn Tyr Glu His Lys Val Tyr Phe Ser Asn Pro Tyr Gln Asn Glu	
210 215 220	
Val Tyr Glu Val Arg Thr Asp Ser Leu Arg Val Ala Tyr Arg Trp Asp	
225 230 235 240	
Phe Gly Lys Asp Asn Leu Asp Leu Lys Glu Tyr Gly Phe Thr Leu Leu	
245 250 255	
Glu Asp Gln Lys Val Glu Glu Tyr Lys Leu Met Leu Gln Cys Leu Arg	
260 265 270	
Asp Ser Thr Val Pro Tyr Leu Leu Arg His Gln Phe Gln Asn Lys Lys	
275 280 285	
Tyr Tyr Tyr Thr Met Leu Thr Phe Gly Phe Arg His Arg Ile Asn Leu	
290 295 300	
Phe Tyr Arg Lys Asp Asp Gly Lys Ser Phe Phe Glu Lys Thr Ala	
305 310 315 320	
Glu Gly Val Leu Leu His Pro Leu Ala Phe Asn Glu Asp Phe Leu Thr	
325 330 335	
Cys Ile Val Phe Asn Glu Asp Phe Pro Asn Tyr Glu Lys Val Leu Pro	

340	345	350
Ser Glu Glu Tyr Lys Lys Leu Glu	Glu Arg Leu Glu Asp	Asp Asn Pro
355	360	365
Cys Leu Ile Lys Phe Tyr Phe Lys		
370	375	

<210> 6354

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<213> B.fragilis

<400> 6354

Leu Tyr Arg Ile Asn Met Asn Asn Met Arg Phe Asn Leu Val Val Leu		
1	5	10 15
Phe Val Ile Leu Leu Ser Phe Tyr Ser Cys Gly Arg Glu Glu Lys Thr		
20	25	30
Val Tyr Asp Phe Pro Leu Glu Gln Ser Leu Lys Ser Asp Lys Glu Val		
35	40	45
Ser Leu Asn Lys Glu Leu Leu Ala Pro Tyr Leu Met Cys Ser Tyr Asp		
50	55	60
Ser Thr Leu Cys Leu Ile Asp Trp Thr Ala Asn Pro Met Val His Val		
65	70	75 80
Tyr Asn Met Asn Thr Gly Lys Glu Met Val Ala Phe Gly Asn Lys Gly		
85	90	95
Met Gly Pro Asp Asp Phe Leu Ser Ile Ser Gln Met Tyr Val Asp Met		
100	105	110
Gly Lys Arg Ser Leu Val Leu Tyr Asp Gln Ser Leu Gln Thr Ile Ser		
115	120	125
Ser Phe Gln Ile Asp Ser Leu Ala Gln Gly Ser Leu Ser Lys Ile Asp		
130	135	140
Cys Val Ser Ala Pro Lys Leu Gly Met Asn Arg Val Tyr Ala Tyr Ser		
145	150	155 160
Asp Ser Ile Phe Tyr Gly Ser Gly Thr Phe Glu Ser Gly Leu Ile Ala		
165	170	175
Lys Cys Asn Gln Lys Glu Ile Leu Asn Gln Tyr Leu Pro Phe Pro His		
180	185	190
Thr Glu Gln Ala Val Asn Arg Asp Val Asn Tyr Leu Leu Phe Gln Gly		
195	200	205
Asp Leu Ile Met Lys Pro Asp Lys Lys Arg Phe Ala Tyr Leu Ala Tyr		
210	215	220
Glu Cys Asp Leu Leu Ser Ile Gln Lys Val Val Asn Asp Thr Cys Leu		
225	230	235 240
Glu Ser Val Val His Leu Asn Thr Tyr Thr Pro Leu Phe Glu Asn Gln		
245	250	255
Ser Thr Asn Glu Val Ser Ser Val Asn Val Ser Thr Asp Ser Pro Lys		
260	265	270
Gly Phe Leu Arg Gly Val Ala Thr Glu Asn Tyr Val Tyr Ala Leu Tyr		
275	280	285
Ser Gly Gln Ile Gly Lys Asn Lys Ala Ile Ala Asn Glu Ile Tyr Val		
290	295	300
Phe Asp Trp Glu Gly Arg Ala Val Lys Lys Val Ile Leu Asp Arg Trp		
305	310	315 320
Gly Val Cys Ile Ser Val Asp Ser Asn Asp Glu Arg Leu Cys Leu Met		
325	330	335
Thr Lys Glu Thr Asp Gly Gly Glu Glu Arg Tyr His Tyr Tyr Cys Tyr		
340	345	350
Gln Leu Asn		
355		

<210> 6355
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 <213> B.fragilis

<400> 6355

Ile	Lys	Lys	Ile	Met	Gly	Lys	Tyr	Ile	Ser	Ile	Leu	Ile	Leu	Ile	Glu
1				5					10					15	
Thr	Ile	Leu	Leu	Gly	Cys	His	Ser	Thr	Lys	Glu	Lys	Ile	Glu	Phe	Ser
		20						25					30		
Asn	Arg	Val	Ile	Cys	Ser	Asp	Ser	Ile	Ser	Arg	Glu	Leu	Val	Val	Leu
	35						40					45			
Asn	Asp	Thr	Phe	Leu	Phe	Ser	Tyr	Pro	Leu	Gln	Ile	Glu	Cys	Ile	Asp
	50					55				60					
Ser	Met	Leu	Leu	Val	Leu	Asp	Asn	Val	Asn	Asn	Asn	Phe	Phe	His	Leu
65					70					75				80	
Phe	Thr	Leu	Lys	Gly	Val	Pro	Ile	Lys	Ser	Phe	Gly	Glu	Lys	Gly	Gln
			85					90						95	
Gly	Pro	Ile	Asp	Phe	Ile	Asn	Val	Glu	Ser	Phe	Asn	Leu	Ser	Glu	Asp
		100						105					110		
Arg	Lys	Ile	Met	Tyr	Ala	Tyr	Asp	Thr	Ser	Leu	Arg	Lys	Ile	Val	Lys
	115						120					125			
Tyr	Asp	Val	Ser	Ser	Phe	Leu	Lys	Asp	Ser	Leu	Lys	Ser	Glu	Val	Ile
	130					135					140				
Gln	Val	Asn	Tyr	Asp	Ser	Leu	Pro	Gln	Thr	Glu	Val	Pro	Thr	Ile	Ile
145					150					155				160	
Tyr	Asp	Met	Leu	Ser	Leu	Lys	Asp	Ser	Asn	Phe	Leu	Val	Lys	Ala	Asn
			165					170						175	
His	Lys	Gly	Leu	Arg	Phe	Gly	Leu	Leu	Lys	Asp	Gly	Lys	Val	Thr	Gln
		180					185						190		
Leu	Tyr	Asn	Ser	Phe	Ser	Asp	Cys	Val	Asn	Thr	Asn	Asp	Asp	Glu	Glu
	195						200					205			
Val	Trp	Ser	Val	Phe	Cys	Ser	Asn	Thr	Lys	Thr	Lys	Leu	Arg	Pro	Asp
	210					215					220				
Arg	Thr	Lys	Met	Leu	Asn	Ala	Thr	Tyr	Leu	Gly	Gly	Val	Leu	Glu	Leu
225					230					235				240	
Phe	Asp	Leu	Asp	Asp	Asn	Cys	Ser	Leu	Ser	Leu	Ala	Lys	Ile	Leu	Tyr
			245						250					255	
Ile	Tyr	Glu	Pro	Lys	Tyr	Gly	Ile	Ala	Glu	Gly	Ala	Ile	Pro	Lys	Tyr
		260					265						270		
Val	Val	Phe	Asn	Glu	Thr	Thr	Gln	Ile	Gly	Phe	Glu	Asp	Ile	Tyr	Val
		275					280					285			
Thr	Asn	Asn	Ser	Ile	Tyr	Thr	Leu	Leu	His	Ser	Ile	Gly	Ser	Glu	Thr
	290					295					300				
Leu	Pro	Ser	Glu	Ile	Thr	Val	Phe	Asp	Trp	Ala	Gly	Ile	Pro	Ile	Thr
305					310					315				320	
Lys	Ile	Lys	Thr	Gly	Cys	Ser	Leu	Ser	Asn	Ile	Ala	Val	Asp	Gly	Lys
			325						330					335	
Asp	Asn	Thr	Ile	Tyr	Val	Ile	Ala	Glu	Asn	Glu	Gln	Asn	Ala	Tyr	Glu
		340						345					350		
Leu	Ser	Cys	Leu	Ser	Leu	Asn									
		355													

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<400> 6356

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 Val Asn Ser Leu Phe Leu Gln Asn Val Glu Ala Leu Ala Gly Ser Glu
 35 40 45
 His Val Thr Asn Leu Gly Cys Leu Gly Asp Gly Ser Val Asp Cys Pro
 50 55 60
 Ile Asn His Ile Lys Val Glu His Val Val Gln Gly Phe Ser Leu Gly
 65 70 75 80
 Glu

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 20 25 30
 Lys Arg Val Asn Ser Leu Phe Leu Gln Asn Val Glu Ala Leu Ala Gly
 35 40 45
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 Leu Gly Glu

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 Lys Arg Ser Arg Leu Phe Leu Trp Ile Phe Gly Ile Leu Met Gln Ala
 20 25 30
 Phe Leu Ile Ser Met His Phe Tyr Gln Arg Asn Met Glu Ala Met Tyr
 35 40 45
 Ala Glu Thr Glu Tyr Leu Leu Lys Glu Val Leu Asn Glu Glu Leu His
 50 55 60
 Arg Lys Gln Gln Glu Leu Asn Leu Phe Tyr Ile Ser Lys Val Thr Ile
 65 70 75 80
 Asp Thr Ile Pro Leu Lys Ile Arg Val Thr Thr Ser Lys Gly Val Lys
 85 90 95
 Thr Phe Thr Val Asp Ala Lys Lys Ser Lys Lys Asn Ile Ser Gln Ser
 100 105 110
 Met Ala Glu Arg Ser Trp His Ser Ala Ala Cys Met Lys Ser Arg Leu
 115 120 125
 Ser Thr Asp Thr Leu Asn Leu Trp Asn Arg Arg Leu Lys Ser Gln
 130 135 140
 Gln Ile Phe Ala Lys Thr Asp Val His Ile Thr Thr Thr His Leu Asp
 145 150 155 160
 Asn Thr Ile Ser Tyr Cys Lys Cys Lys Asn Cys Lys Asp Tyr Cys Phe